THE BUSINESS QUARTERLY

VOLUME XVI
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Who's Who in This Issue

What Do High School Students Know About Business?
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The Propane Industry: Its Problems and Its Promise
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Why Non-Food Items Are Increasing in Canada's Food Markets
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Current Books and Articles

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WHO'S WHO IN THIS ISSUE

JOHN J. WETTLAUFER

Mr. John J. Wettlaufer is a member of the staff of the School of Business Administration, University of Western Ontario. A graduate of Western in Business, Mr. Wettlaufer has this spring completed the requirements for the M.B.A. degree. The article "What Do High School Students Know About Business?" was specially adapted for *The Quarterly* from his Master's thesis. The entire survey was organized in three sections, viz:

Part I : Results of the First Questionnaire Are Discouraging;

Part II : Testing the Socio-Economic Plant Tour as a Teaching Medium;

Part III: The Socio-Economic Plant Tour Endorsed by the Findings of the Second Study.

The first instalment, appearing in this issue, will be followed by Parts II and III in the Summer and Fall issues, respectively.

JAMES J. D. McKNIGHT

Mr. McKnight is a 1951 graduate of the School of Business Administration, University of Western Ontario. His survey on propane was one of the major assignments undertaken by a Business student for individual research. Mr. McKnight is presently employed with International Business Machines Limited in Toronto.

BEATRICE V. SIMON

Miss Simon is Assistant Librarian of McGill University, with special responsibility for the Faculty, School, and Departmental Libraries. She holds B.A. and M.A. degrees from McGill University and is a graduate

of the McGill Library School. Miss Simon began her career as a librarian in the Medical Library at McGill University, was a full-time member of the teaching staff of the McGill Library School from 1938-1943, and still, as Sessional Lecturer, gives the course on Organization and Administration of Special Libraries. In 1943 she was appointed Librarian of Purvis Hall at McGill, where, until 1947, she administered the library of the Faculty of Law and organized and administered an entirely new Library for the School of Commerce.

KENNETH W. HARRIGAN

A 1951 graduate of the University of Western Ontario in Honour Business Administration, Mr. Harrigan is now working with the Ford Motor Company of Canada at Windsor. His report on the trend toward non-food items in Canadian grocery stores was prepared under the direction of the Division of Research of the School of Business at Western.

Book and Article Reviewers: M. K. Inman is Professor and Head of the Department of Economic and Political Science, University of Western Ontario; J. C. Taylor is Professor of Business Administration, Western's Business School; J. A. Lyone Heppner is Montreal District Manager of the Confederation Life Association and former Sales Manager of the General Products Manufacturing Corporation Ltd.; J. McIsaac, a 1951 graduate of Western in Honour Business Administration, is employed by the Alaska Pine and Lumber Company Ltd.

THE
BUSINESS QUARTERLY

What Do High School Students Know About Business?

John J. Wettlaufer
Instructor, School of Business Administration
University of Western Ontario

The attitudes and opinions of the students of to-day will set the atmosphere in which business must operate to-morrow. The great majority of students will go to work upon completion of their high school studies. They will be employed in a business system of which they have learned very little. They will take their place as citizens of the community with little knowledge of the contribution that business makes to that community—the provision of jobs, income, and general welfare.

Mr. Wettlaufer's survey of London high school students had three well-defined purposes: (1) to show the attitudes and opinions of high school students, with regard to the business world, as revealed through questionnaire study; (2) to introduce the socio-economic plant tour to Canadian business as a means of promoting better understanding of the private ownership system; and (3) to test its effectiveness as a teaching medium upon high school students as revealed through a second questionnaire study.

In this first of three articles to be published in "The Quarterly," the investigator deals in detail with Purpose (1). After outlining his procedures and techniques, Mr. Wettlaufer tabulates the results of his questionnaire and shows what high

school students are thinking about: the division of the sales dollar, profit levels, company investment in plant and machinery per worker, the desirability of closer government regulation, and other matters of important concern to the business community.

BUSINESS LEADERS are becoming increasingly disturbed by the gap that exists between society and business. A solution has been sought by some of the keenest minds in the country. One result was the "Sell Free Enterprise" campaign—a most controversial issue in recent months. According to an interesting series of articles on communications by *Fortune* magazine, this program has not been notably successful.

> "The employee, surveys indicate, is as misinformed about business as ever. Even the stockholder seems to have remarkably little interest in what management has to say to him; the public even less, and the government none at all. Not since the early thirties has business been so troubled by the gap between it and the rest of society."[1]

The propaganda approach would seem to be fruitless. Mass communication by radio, magazine, and word of mouth has not been able to make a real dent in public opinion. Over the past few years an enlightened business has been doing a good job, but this performance has not been appreciated by the great bulk of the public.

Many people feel that the situation in Canada is different. This survey is an attempt to show the attitude of high school students (which reflects to a large degree the thinking of their parents) toward our industries, and to subject the students to a frank and factual presentation of business in its own environment in an effort to clarify any misunderstandings that may exist.

The survey would appear to be well-timed. In December, 1950, the Hope Report brought attention to a need for revision of our educational system in Ontario. It recommends, among other things, that the local authorities be given a larger voice in the shaping of courses of study.

In line with this thinking, the London Board of Education has set up a Citizens' Advisory Committee with approval of the Ontario Department of Education. This committee is made up of representatives from nearly every organization in the city, and has as its purpose to study and recommend any necessary changes in the curriculum of Grades 7, 8, 9, and 10. It is hoped that the findings of this article will concern every citizen who is interested in education, especially at the high school level.

Mechanics of the Survey

In making the survey, a self-administered questionnaire was selected

[1] "Is Anybody Listening?" *Fortune*, September, 1950, p. 77.

as the most satisfactory medium, since it could be given under controlled conditions; *e.g.* during a class hour under supervision. It permitted the use of several types of questions which encouraged freedom of comment. The questionnaire required no signature, which left the respondent anonymous and completely at ease to voice his own opinion.

The plant tour was chosen as the medium in which business could best tell its story. A visit to a plant makes a student use all five senses—sight, hearing, smell, taste, and touch. He becomes a part of the atmosphere in which business must operate. The result is keener interest and stronger impressions.

Limitations

To mention an opinion survey is to bring to mind immediately the great failure of 1948. There is no doubt that the pollsters were all wrong in their prediction of the outcome of the presidential election. However, the major reason for this failure has been fairly well established[2] as having to do with the use of "quota" instead of "probability" samples.[3]

Another problem stems from a quirk in human nature. If you ask someone for an opinion on something, the chances are that he will give you one—whether or not he knows what he is talking about. *Tide* magazine reports in its March 14, 1947 issue that people were asked their opinion of the Metallic Metals Act. There is no such act; yet 70 per cent of those polled gave investigators an opinion, and only 30 per cent had no opinion!

Opinion surveys are admittedly not infallible. For this reason, all succeeding observations in this article are prefaced by the warning of Elmo Roper, chief pollster for *Fortune* magazine:

> (1) The answers to all questions cannot be accepted at face value.
>
> (2) Conclusions cannot be based invariably on the answers to any single question.
>
> (3) The importance of "no opinion" or the undecided vote is never to be overlooked.
>
> (4) The same questions, differently worded, might have produced different results.[4]

---

[2] "How the Election Polls Went Wrong," *Business Week*, November 13, 1948, p. 26.

[3] "Quota" sampling breaks down the population into divisions, or strata, according to the distribution of the characteristics most closely related to the subject being studied. The theory is that if you know in advance that people's opinions are affected by various things—age, race, creed, income, occupation—it is possible to set up a sample with enough factors in the right proportion. "Probability" sampling selects the sample members at random from the population as a whole. No attempt is made to ensure the representation of particular groups, the theory being, that the process of sample selection would automatically tend to ensure such representation. Variations in "probability" sampling are commonly termed the "area" and "precision" methods.

[4] "Fortune Surveys: Survey Pitfalls," *Fortune*, April, 1947, p. 6.

The First Questionnaire

There has been a good deal of speculation as to the amount of knowledge a student can gather from outside the classroom. He reads newspapers, listens to the radio, hears business being discussed in his home and, in many instances, is employed by some business firm during the summer. How much information he has absorbed should be revealed to a large degree by the results of a specially constructed questionnaire.

Technique

A self-administered questionnaire, containing over eighty questions of various kinds was submitted to nearly 400 [5] Grade 12 students in the City of London.[6] The questionnaire was completed on school time under the supervision of the investigator and the presiding teacher in each school. It was designed to obtain surface opinion only; *i.e.*, it was not intended that the student spend any appreciable length of time trying to compute the average per cent of profit that a company would make.

Results of the Questionnaire

The results of the survey indicate that the majority of students are confused about business and ignorant of basic economic facts. Only a few have acquired a practical understanding of our private ownership system and how it works. The general impression is that business has more good features than bad ones, but a fairly large proportion did not express any opinion.

Q. "Which of these comes closest to your impression of the business system in this country?"

ON THE WHOLE THE GOOD FEATURES OUTWEIGH THE BAD	39.6%
IT HAS AS MANY GOOD AS BAD FEATURES	36.2
VERY GOOD; NEEDS LITTLE CHANGE	6.9
VERY BAD; MAJOR CHANGES ARE NEEDED	2.1
NO OPINION	15.2

Students listed the following reasons for liking the present business system:

— "There is much competition, only a few monopolies, and everyone who is willing to work can make a profit."
— "Business is our bread and butter, and we have been eating alright."
— "Canadian business is among the soundest in the world."
— "We are still growing and improving. There are less strikes to-day."

---

[5] Beal Technical School, 86; Beck Collegiate, 61; Catholic Central, 58; Central Collegiate, 88; South Collegiate, 103.

[6] Permission to conduct this survey was granted by the London Board of Education on Feb. 15, 1951, and by the Separate School Board on Jan. 5, 1951. The questionnaires were completed through the co-operation of Dr. A. Wheable, Father Feeney and the principals of the local secondary schools.

— "More people are happier than ever before."
— "Some changes are needed, but all in all, most are satisfied."

Here are some of the reasons the students gave as evidence that changes are needed:

— "Poor rates of pay and poor working conditions."
— "Strikes indicate that the workers are dissatisfied."
— "Business has broken contracts and lied to the people."
— "Technological unemployment."
— "Too many small businesses."
— "The workers are slaves."

Little Knowledge of Basic Facts

The students admitted frankly that they had little or no idea concerning profits, return on investment, or number of employees. When questioned about profits, 22.6 per cent would not venture a guess. Only three per cent of those that did express an opinion indicated a profit of below 10 per cent.

Q. "Just as a rough guess, what per cent of profit would you say the average company makes?"

(average) — 35%

The students estimated 25 per cent as a fair profit. It is interesting to note that, although the profit figures ranged from ½% to 1000%, a majority of respondents thought that the figure they named was reasonable.

Q. "Do you feel that most industries are making too much profit, a reasonable profit, or not enough profit?"

REASONABLE PROFIT	61.5%
TOO MUCH PROFIT	22.5
NOT ENOUGH PROFIT	3.2
NO OPINION	12.8

The stockholders are believed to be getting a return of 14 per cent on their investments, but not even one-tenth of the group would consider investing their money in the stock of a company. Corporation stock remains a mystery. More than 70 per cent of the students had no idea where it could be purchased.

Modern industry requires a large amount of capital. When the students were quizzed on the average amount of investment in plant and equipment per employee, nearly 60 per cent registered "no opinion". The others set up an average figure of $1600.

Lack of Understanding of Basic Principles

The profit motive, competition as a means of providing the best possible goods at the lowest possible cost, and higher productivity as a

basis for raising the standard of living, are all bulwarks of our private enterprise system. How do the employees of to-morrow feel about these questions? The following answers are enlightening:

Q. "In industries where there is competition, do you think companies should be allowed to make all they can, or should the government put a limit on the profits companies make?"

LIMIT PROFITS	53.2%
MAKE ALL THEY CAN	33.9
NO OPINION	12.9

Q. "In normal times, do you think that we can depend on competition to keep prices at fair levels, or is some sort of government control needed to keep prices fair?"

COMPETITION	50.7%
GOVERNMENT CONTROL	41.2
NO OPINION	8.1

Q. "Which of these two ideas about how to improve the Canadian worker's standard of living do you think is more correct?"

THE WAY TO IMPROVE THE WORKER'S STANDARD OF LIVING IS FOR ALL WORKERS TO PRODUCE MORE	38.0%
THE WAY FOR WORKERS TO INCREASE THEIR STANDARD OF LIVING IS FOR THEM TO GET MORE OF THE MONEY THE COMPANY IS ALREADY MAKING	36.5
NO OPINION	25.2

Socialistic Tendencies

With little knowledge of what makes the competitive business system function, it is not surprising that the students show a desire to let the government run things.

Q. "What is your feeling about government regulation of business — would you say it's better to regulate business pretty closely, or would you say the less regulation the better?"

BETTER TO REGULATE CLOSELY	51.5%
LESS REGULATION THE BETTER	16.1
NO OPINION	12.9

Government ownership of industries seems to be favoured in those areas which are already under government control; *e.g.* banks, railroads and electric power. The significant factor is the fairly large segment

of "no opinion" which can be swayed either for or against government ownership in the other areas.

Q. "What do you think about government ownership and operation of the following kinds of business?"

	FOR	AGAINST	NO OPINION
ELECTRIC POWER COMPANIES	71.4	19.0	8.6
RAILROADS	58.7	26.9	14.4
BANKS	57.1	22.2	20.7
STEEL COMPANIES	22.2	53.9	23.9
OIL COMPANIES	22.2	49.2	28.6
AUTOMOBILES	20.6	65.0	14.4

Another sphere of responsibility that the students feel belongs to the government is the creation of jobs for everyone who is willing and able to work.

Q. "Do you think that it is the responsibility of the federal government to see that everyone who is willing and able to work has a job?"

YES	74.6%
NO	17.4
NO OPINION	8.0

The students displayed a keen interest in labour. They approved wholeheartedly the labour organization re the right to organize a union and bargain collectively. Labour was given a large share of the credit for the rise in living standards, whereas business ran a close third with the government.

Q. "Who would you say has done the most to improve the living standards of the people in this country—organized labour, the government, or business management?"

ORGANIZED LABOUR	50.8%
THE GOVERNMENT	15.2
BUSINESS MANAGEMENT	14.7
NO OPINION	19.3

All in all, over 80 per cent of the students agreed that unions are a good thing for the country; at the same time they feel that it is time to call a halt to the growth of organized labour.

Q. "Would you like to see labour unions grow larger and stronger, or do you think they have grown enough as it is?"

HAVE GROWN ENOUGH	63.4%

SHOULD GROW LARGER	14.2
TOO LARGE NOW	16.1
NO OPINION	6.3

The question of who will guide our country's destiny in the future is still open to debate. On the basis of the following question, the business leader has a slight edge over the labour leader, but the answer to the question lies in the segment of "no opinion."

Q. "Whom would you rather see in a high government position—a labour leader or a business leader?"

BUSINESS LEADER	34.4%
LABOUR LEADER	31.2
NO OPINION	34.4

In support of a business leader, the survey cites greater experience, more ideas and a better knowledge of the country's affairs. (One student remarked that the government is a business and therefore business can manage it better.) In general, there was a feeling that business was better qualified and would be less biased than labour.

The group upholding labour believe that the labour leader will be a better representative of the common people. They point out that he knows what it is like to work hard and is better acquainted with the working class. Many of the students observed that business looks down on labour and would not look after the best interests of the masses.

Students Look for Co-operaion

The survey brought to light many comments expressing a desire to see more co-operation between business and labour. Some students would not make a choice between labour and business. They specified that a combination of the two should guide and protect the nation. Others wanted the team enlarged to include the government. This idea is evidenced in the following question:

Q. "Who do you feel should be responsible for taking care of employees when they are too old to work—the federal government, the company, the employee himself, or a combination of these?"

ALL THREE	40.6%
BOTH THE COMPANY AND THE EMPLOYEE	17.2
BOTH THE GOVERNMENT AND THE EMPLOYEE	12.5
THE COMPANY	10.9
THE FEDERAL GOVERNMENT	7.8
THE EMPLOYEE	3.2
NO OPINION	7.8

Security More Important Than Pay

"Take a chance" is a recognized basic factor in our competitive business system. It appears that the students of to-day are not imbued with the spirit of chance that distinguished their forefathers.

Q. "When you look for a job, which will be *more* important to you—the amount of pay or the amount of security the job offers?"

AMOUNT OF SECURITY	77.6%
AMOUNT OF PAY	8.6
NO OPINION	13.8

Further evidence of this trend towards security is found in the importance attached to the pension plan. Over three-quarters of the students emphasized their desire to find a job with a company that provides a pension plan for its employees.

The search for safety is carried into the investment field. Investment to the majority of students means putting their money in a place that offers security foremost.

Q. "If you had some money, say $100, to invest, what would you do with it—put it in a savings bank, buy government bonds, or buy stock in a company?"

GOVERNMENT BONDS	50.8%
SAVINGS BANK	38.0
STOCK IN COMPANY	9.5
NO OPINION	1.7

The principal reasons given for the choice of bonds were security (65 per cent), higher interest, a means of helping the government, and the difficulty of withdrawal. Students preferring a savings bank listed security (41.6 per cent), ease of withdrawal, and best interest rates as their reasons. The few supporters of stock purchase mentioned "higher dividends" (50 per cent), "the money is working," and "the only way to get rich," as their principal arguments.

Opportunity Above All

The survey seems to indicate quite clearly that while the students place a heavy emphasis on security, they are ready and willing to put it aside in favour of opportunity.

Q. "When you look for a job, which will be more important to you—the amount of opportunity or the amount of security the job offers?"

AMOUNT OF OPPORTUNITY	71.4%
AMOUNT OF SECURITY	20.6
NO OPINION	8.0

The majority are in favour of the government's placing a limit on the profits of a company, but they are reluctant to have the same principle applied to themselves.

Q. "Do you think that it would be a good thing for the country if the government put a top limit on the salary any man could make?"

NO, NOT GOOD	69.8%
YES, GOOD	17.4
NO OPINION	12.8

Most students have very definite ideas about the salary or wage they expect to receive. They plan to start at an average of $32.00 a week, work for five years up to $52.00 a week, and achieve their ultimate ambition at a salary of $100.00 a week.

Summary

In summing up the students' opinions, it is evident that the problem of economic illiteracy is real enough. Great areas of misunderstanding do exist because of the second-hand information upon which the student must depend for his knowledge of business and how it operates.

Q. "Where have you picked up most of your ideas about the business system and how it operates?"

SCHOOL	50.0%
HOME DISCUSSION	17.7
NEWSPAPERS	12.9
PERSONAL EXPERIENCE	8.1
OBSERVATION	4.8
DON'T KNOW	3.2

(minor categories omitted)

The students state that they have learned most from our schools, but the fact is that in the city of London there is only *one* secondary school[7] equipped to offer a course in economics. The present curriculum set down by the Ontario Department of Education does not provide for the study of economics in any of the academic schools.

In the Summer issue of "The Quarterly," Mr. Wettlaufer continues with Part II of his article—the conduct of two socio-economic plant tours specially devised to promote a better understanding on the part of the students of basic economic facts.

[7]Beal Technical School.

The Propane Industry: Its Problems and Its Promise

James J. D. McKnight

The liquid petroleum gas industry, as young as 1947 in Canada, is still in its merest infancy. Yet its extraordinary growth and the enthusiastic acceptance of its product by present users clearly indicate that it is here to stay. In this article, based on intensive research, Mr. McKnight outlines the major problems of distribution and pricing which face the industry, and forecasts the trend of its development. His task admittedly "was complicated by the complete lack of pertinent Canadian statistics, and without the generous cooperation of several executives* closely associated with the industry, would have been impossible."

In an attempt to make the results as authoritative as possible, the study was limited to propane in Ontario. Mr. McKnight warns, "Certain conclusions have been drawn and recommendations made, based upon facts as they exist to-day. However, the whole industry is so new and undeveloped that it is in a constant state of flux. Facts to-day may become fiction to-morrow. Consequently, the findings of this survey should be treated with care, and further study should be undertaken year by year in order to keep pace with the rapidly changing developments. For example, the results of this report are based upon so-called normal business conditions. It is impossible at this time to measure the total effect that a war-time economy will have on the industry, or to estimate to what extent government intervention, by way of material priorities, war contracts, production and price controls, etc., will disrupt its normal development."

What Is Propane?

Technically, propane is a petroleum gas which has been liquefied by the application of pressure or a reduction in temperature. Along with propylene, butane, iso-butane, and butylene, it is a member of the paraffin hydro-carbon series present in crude petroleum and natural gas, along with other hydrocarbons. From a layman's point of view it is partly gasoline, partly natural gas. When separated from the other

*Mr. Duncan C. Ferguson, Managing Director, National Propane Company Ltd., Hamilton; Mr. Keith Schram, Empire Brass Co., London; Mr. Frank Wilde, Manager, Imperial "Essotane" Bulk Plant, Stratford.

hydrocarbons, propane is compressed into cylinders or tanks for marketing. In its stored condition it is part liquid, part gas, but if exposed to the air it will immediately expand and vaporize. In its normal state propane is odorless. But to aid detection of a leak, an odorant called ethylmercaptan is added by refineries. The resultant smell is something like rotten cabbage.

In view of our Canadian climate, and the physical properties of propane, it is at present the most useful of the L.P. gases. For example, below 32 degrees F., without heat exchangers to raise the temperature artificially, it would be impossible to change butane from a liquid to a gas; the corresponding temperature for propane is -44 degrees F. At the other end of the scale propane will not freeze or solidify above -310 degrees F. Contrary to popular belief, it is not a particularly hazardous fuel to use, simply because it will not burn if the mixture of escaping gas is less than 2.3% or more than 9.5% of the normal atmosphere, respectively the lower and upper limits of inflammability.[1] The danger lies in the fact that it is heavier than air, and thus leaks escape detection more readily than is the case with natural gas. Consequently, all tanks must be stored outside buildings. Safety relief valves and automatic shut-offs make the system practically foolproof.

Until recent years in Canada, propane and the other L.P. gases were burnt off in large quantities as a waste product by the refiners. To-day they are the basis for a new potentially huge industry. Three factors are largely responsible for this development. First, expansion of the petroleum industry in Canada and the U.S. made the fuel available in larger quantities than ever before, both in its natural state from "wet gas" wells, and as a by-product of refining. Second, government conservation measures require oil producers either to market propane or pump it back into the ground. Third, modern methods of handling and storage have eliminated earlier problems in this direction.

Uses of Propane

Various publications list well over a thousand different uses for propane which have been applied successfully in the domestic, commercial, and industrial markets of the United States. This article merely highlights the proven or potential Canadian uses in each of these market areas, which are likely to be profitably developed in the near future.

Domestic Uses

In the United States the domestic market is the most important, both numerically (over 5 million users) and by annual gallonage consumption (over a billion and a half gallons in 1948).[2] In Canada as yet, domestic users, though numerically the largest market, by gallonage sales

[1]Table T-4, "L.P. Gas Pocket Guide": The Bastian-Blessing Co., Chicago.
[2]U.S. Bureau of Mines Report for 1950.

annually rank second to commercial users. Both constitute the backbone of the propane market since their future development will provide the greatest opportunity for the greatest number of people.

By far the most important appliance in the domestic field is the propane cooking range. It is a real competitor with all other types of gas and electric ranges, and those who actually use propane are its greatest boosters. Hence it is a real "door-opener," paving the way for the future sales of a hot water heater, space heater, or gas refrigerator in the same home. The advantages claimed over wood, oil, and coal ranges are: (1) better cooking results, especially in baking and frying; (2) convenience; (3) greater comfort; (4) cleanliness; (5) excellent appearance. The main competitor is electricity, but gas can offer: (1) faster cooking, (2) better control, (3) better baking and broiling, (4) lower maintenance, (5) greater dependability, (6) lower original cost or investment, both for installation and for the appliance itself. (An electric range costs from $65.00 to $135.00 more than does a fully comparable gas range.) (7) In many localities it is actually more economical to burn gas.

Only a relatively small percentage of domestic users are utilizing propane gas for hot water heating, refrigeration, and space heating as yet. However, as more aggressive promotion is undertaken, and as the potential user becomes more "educated" to the advantages of propane, these appliances will become increasingly important. With such well-known names as Rudd, Gurney, Moffat, Coleman and Servel already on the market with modern, efficient appliances, and with more perfect models following every year, consumer recognition and acceptance is assured. Space heating can potentially become such a gigantic market that it will be treated separately later.

Commercial Uses

At present there is little else but cooking, water heating, and refrigeration to attract the urban and suburban domestic market. In the rural areas it is a different story. There are more than 600,000 occupied dwellings in Ontario situated beyond the gas mains.[3] Every one of these is a potential user of propane gas in some form or another, despite the fact that over 80% have access to electricity.[4]

In Ontario, commercial customers consume about half the output of the L.P. gas distributor.[5] On the farm, in addition to the aforementioned domestic uses, propane has been highly successful when applied to chick hatcheries and poultry brooders, tobacco curing, water pumping (both general and irrigation), providing hot water for dairy sterilizing, warming drinking water for cattle, debristling hogs, singeing fowl, flame cultivating, fruit ripening, power for fruit spraying apparatus, smudge

[3]Duncan G. Ferguson, "Liquid Petroleum Gas—A New Industry in Canada."
[4]41st Annual Report of H.E.P.C.: 1949.
[5]Op. Cit.—Duncan G. Ferguson.

pots for protecting orchards from frost, and crop dehydration. Other important uses are being discovered and perfected every year.

When used in chick hatcheries and poultry brooders, propane has been found to cut down drastically mortality losses, reduce fire hazards (underwriters are said to give better rates for propane than for any other fuel), and provide more convenient, dependable, and economical operation through greater controllability of the heat. Electricity fails to dry the litter properly, while coal and fuel oil are so hot there is a great fire hazard. The hatchery and brooder business is mostly seasonal, but one manager of a vigorous Ontario bulk plant estimates that it accounts for 50% to 65% of his gallonage during the late winter months.

The new flame cultivator substitutes spurts of flame for the old labor of hand hoeing the crop row. In the United States it has been demonstrated that the equipment reduces the cost of cultivating cotton to 50 cents or less per acre, compared with a hand hoeing cost of from $3 to $4 per acre. Two- and four-row models of the cultivators are now in quantity production in the United States, and should find a ready market in Canada.

When used in processing flue-cured tobacco, propane is cheaper, improves the quality of the product, and reduces fire hazards. These advantages are largely due to the very sensitive controllability of the propane flame. However, the South Western Ontario tobacco belt closely parallels the gas mains, and natural gas, coal, and fuel oil are predominantly used. Still, propane is being successfully experimented with and will, when it becomes cheaper, displace these firmly entrenched fuels to a certain extent.

It is a recognized fact that when drinking water goes below 48 degrees F., cows yield less milk and steers gain less weight. Exact figures as to the extent this is so, are unavailable. However, it is believed that the amounts in dollars and cents that would be realized by warming stock drinking water on large beef and dairy farms would, in one season, recover the cost of the propane heating equipment, and would soon mean additional profit in the farmer's pocket. This is a great selling point, and should develop a sizeable market as soon as proven results can be presented to the farmers.

Propane will undoubtedly prove to be a very important fuel in the business of crop dehydration. Over 600,000 tons of dehydrated alfalfa meal are produced annually in the United States.[6] When dehydrated in modern alfalfa mills the fodder retains more of its vital nutrient elements, such as vitamins "A" and "K", protein, riboflavin, and nicotinic acid, than when cut and dried in the fields by older methods. The average drying time of 48 hours is reduced to 60 minutes under gas dehydration. The meal comes out with an average of 5% to 7% moisture content,

[6]O. D. Hall, "Gas Plays Major Role in Harvesting Alfalfa." *Butane-Propane News*: February,

compared to an average of 15% when dried in the field. Risks from crop losses due to bad weather are reduced almost to zero, and deterioration of the product by exposure to weather in the field is eliminated. There is no doubt that this is a fruitful area for development in the future, and that such business will help iron out the seasonal pattern which results from the heavy winter volume. So much for the farm.

Motels are good customers and propane often supplies all their cooking, heating, hot water, and refrigeration needs. Also the commercial cooking load is a real prize, the returns on investment being 1½ to 2½ times the corresponding figure for residential load. Because of propane's absolute uniformity and easy controllability it finds ready acceptance among chefs whether they are operating a kitchen in the smallest restaurant or in the largest hotel. Hence restaurants, lunch rooms, schools, hotels, army camps, hospitals, prisons, churches, and other institutions requiring large cooking facilities, are a fruitful market for development. Propane is popular for heating asphalt and rubber tiles before laying them in floors, and can be used with a special iron for soldering sheet metal, etc.

These are but highlights of the work propane is well suited to perform; there are other miscellaneous uses and more are being discovered all the time. The commercial user will always be an important segment of the propane market.

Industrial Uses

Broadly speaking, whenever heat is required in an industry where a premium is placed upon uniformity, purity (propane burns with absolutely no carbon), controllability, and convenient application (no ash, no handling, etc.), propane will undoubtedly do the job better than any known fuel.

According to Mr. D. C. Ferguson, in his aforementioned article, National Biscuit Corporation has converted 11 of its 90 plants to the exclusive use of propane gas in operating its enormous baking ovens. The Christie-Brown plant outside Toronto is equipped with an L.P. gas plant big enough to supply a town of 15,000 to 20,000 people. Gas is used for the baking process, and arrangements have also been made for equipping the steam boilers (used for building heat and process steam) with gas burners so that gas or fuel oil can be used alternatively as fluctuating prices dictate. Mr. Ferguson estimates that this one factory may eventually use more than a million gallons of propane annually. McCormick's of London is another user of propane for industrial baking.

In glass works, steel mills, ceramic plants, and for textile singeing, propane is extremely valuable in providing higher, more uniform quality, eliminating waste, and increasing production. L.P. gas is also used as a raw material in synthetic rubber processing. For heat treating

of metals and flame cutting it is unexcelled, for it can be controlled to furnish an acid, neutral, or basic flame at will.

Industrial accounts use from 15% to 20% of the total volume of L.P. gas, and this proportion is bound to increase with time. Already several industrial users in Ontario have an individual consumption nearly as great as that of the whole U.S.A. 25 years ago. Of course the distributor benefits particularly from this market because of the economy of servicing such large volume users.

Propane Power

This development is so potentially important it merits separate consideration. Propane is an ideal fuel for carbureting and, as such, can be used to drive internal combustion engines harnessed to perform a multitude of services. The big market is providing fuel for tractors, buses, trucks, and passenger vehicles. In the United States propane has been demonstrated to cut maintenance costs up to 50%. It saves operators up to 2 cents per mile, depending on their geographical location and availability of the fuel. It is safer than any other fuel, has a 125 octane rating, uses higher compression (10 to 14:1), and provides less engine wear. Engines have gone up to 250,000 miles without overhaul because it burns clean with no carbon deposits. In Detroit, where propane is being tested on the street railway, buses operate over 200,000 miles per day. At current prices a saving of over $5000 per day is estimated by converting to L.P. gas. The Chicago Transit Authority bought 500 propane-powered motor passenger coaches on the basis of this sort of cost saving and the proven efficiency of the fuel. Hundreds are operating in Los Angeles, and Spokane has 133. Propane buses are used in Fort Wayne, Galveston, Wichita, Long Beach, and a host of other centres. The Carnation Company has had 100 commercial trucks on L.P. gas for 10 years. In Canada, Edmonton is operating 11 propane-powered buses, Winnipeg and Vancouver five each, and Saskatoon, London, and many other cities are seriously considering a change-over.

The big thing about propane is that it enters the engine as a dry gas, and is thus more completely consumed, giving it an edge power-wise over other fuels. Its slower burning rate gives it smooth power characteristics. In this respect it is similar to steam or electricity, with no detonation, and better acceleration, thus increasing engine service and performance. There is no oil dilution, which means less oil consumption and engine wear. Oil change intervals are extended from two to five times, and "make-up" oil is added far less frequently. Propane vaporizes completely, even on the coldest days, assuring fast, easy starting, and minimizing battery maintenance costs. The simple carburetor eliminates carburetor maintenance. Finally, the fuel system is sealed in practically collision-proof tanks, and there are no overfills or evaporation

losses; an important factor since 3% of the annual fuel bills of commercial operators is lost through these wastes.

With all these positive advantages, what is to prevent widespread adoption of propane power? There are several important factors. First and foremost is the refiners' attitude. The expansion of the petroleum industry, especially the natural gas industry, makes propane available in vast quantities and has caused producers to seek new markets for this product. For example, Imperial Oil is spending $6,500,000 for a natural gas plant at Leduc to process 24 million cu. ft. of gas daily. This will make available vast quantities of propane and butane. Reasonably enough the producer will always strive to get as much money from a barrel of crude as he can. More gasoline than propane will always be obtained from a barrel of crude and, judging by the trend over a number of years, the price of propane should always be a certain percentage of the cost of gasoline. This price structure is almost guaranteed. For example, to-day in Edmonton tank car prices of gasoline (before tax) are around 20 cents to 21 cents per gallon; propane is 7½ cents to 10 cents. Gasoline retails in Edmonton at 35 cents to 38 cents a gallon, and propane at 18 cents a gallon.[7] This adds up to one major conclusion: the producer will never release sufficient propane to take care of passenger car operations unless, and until, he has found a suitable alternate market for his gasoline. Hence is banished to the dim and distant future any widespread usage of propane for passenger car operation.

Such is not the case with regard to tractors, trucks, buses and other miscellaneous power machinery. Once the problems of supply, distribution, lack of storage and re-fuelling have been licked (and that time is not far distant), propane will be commonly used for these purposes, probably to the fullest extent that the petroleum producer will assure a constant supply. In the matter of supply probably the tractor load can be handled as it is developed. It appears that within five years, as a best estimate, all of the bus load can be handled; but it will be much longer than this before propane-powered trucks will be a not-unusual sight on Canadian highways. The reasons are obvious. The domestic, commercial, and industrial load will make ever-increasing demands on the limited supply of propane; and to illustrate further, all the refineries in Canada to-day could not produce enough propane for passenger bus requirements alone, although within five years this should be possible. True, huge quantities of propane could be imported from the U.S., but only at a prohibitive cost—even if the two governments would permit it.

Another serious problem affecting the whole propane industry in Ontario is that at present it is illegal to transport propane by tank truck over Ontario highways. This is a foolish and out-moded law, and informed sources expect permissive legislation to be passed in 1951,

[7] *Financial Post*: November 4, 1950, p. 12.

probably by late Spring. Such transportation is perfectly legal in all of the 48 states in America, and most of the other Canadian provinces. The producers, distributors, and consumers all want it since it will provide cheaper more efficient handling from which they all will benefit. There is no reason why the permissive bill should not go through, with adequate safety provisos, probably as outlined by the National Bureau of Fire Underwriters.

The problem of insurance is rapidly being eliminated. Underwriters are preparing to insure buildings, carriers, and storage plants at as fully competitive rates as for other inflammable fuels. The shortage of consumer storage space, the scarcity of suitable tank cars and trucks, and the lack of adequate re-fuelling facilities are other major problems. Over all looms the shortage of steel to build them as the country swings into a defense economy. By the same token, an acute gasoline shortage due to war or other causes, would see a rapid development of propane as a power fuel. With regard to propane re-fuelling, unlike gasoline re-fuelling, there has to be a sealed connection between the pump and vehicle before any fuel passes through. This is the major reason why the tractor (fuelled by replaceable cylinders) and the urban passenger bus (fuelled at a central terminal) markets will be developed well in advance of the inter-urban and inter-province bus and truck market. Another consideration is the $350-$400 average cost of converting a motor to propane which may run as high as $1000 for very large systems. In the final analysis, however, all these problems are relatively short-term and will not prove to be permanent deterrents to the development of the "power" market, if the producer will guarantee an adequate supply of propane at the right price.

The profit potential is huge, both for the producer and the distributor. Canadian figures are not available, but in the U.S. there are 3½ million tractors burning upwards of 3¼ billion gallons of fuel annually, or approximately 930 gallons each per year. This amounts to about 45 cylinders of gas per tractor per year. Considering the relative economies of supplying and servicing the two types of customer, it would seem that one tractor account is as valuable as eight or ten average domestic accounts.

Space Heating

The use of propane for heating purposes is another potential giant worthy of separate consideration. At present only a few experimental floor furnaces and converted standard type furnaces are in operation in Ontario. Results to date have been far from satisfactory. Servicing and maintenance are the biggest headaches, and it is a prohibitively expensive method of heating under the present price structure. The future holds much brighter prospects. When the law permits tank trucks to transport fuel, and when other economies are effected, it is estimated that the

cost of propane will be 20 cents to 25 cents per gallon. In addition, more efficient furnaces, built exclusively for propane use by well-known manufacturers, will soon be on the market. In the United States, where these conditions already prevail, there are over two million homes and farms using propane for house heating. Experience there has shown that it is not economical to attempt to heat a home of over six rooms with propane. For larger dwellings the dollar gap between the cost of propane and competing fuels widens.

Assuming that a six-room house is the largest dwelling that will be serviced, what is the situation in Canada? Furnaces may be gravity warm air, forced air, air conditioned, or hot water, depending on the user's choice. All types may be obtained to burn propane exclusively, and come equipped with the usual filters, fans, thermostats, safety devices, etc., commonly used with other fuels. Considering that the average six-room house has 400 sq. ft. of radiation and 8,000 degree days for the normal Canadian heating season for a total B.T.U. loss of 130,000,000, and that at present Essotane prices are $7.00 per cylinder after the eighth one purchased, propane gas is out of the question for house heating. To illustrate, one gallon of propane equals 100,000 B.T.U. or 80,000 effective B.T.U. if burning is 80% efficient. Therefore 1625 gallons of propane would be required to do the job, or approximately 80 cylinders of gas, at a total cost of $579.00 per season. This is over twice as much as the cost of heating with manufactured gas, which would amount to $263.90 per season under the same circumstances, and which is presently the most expensive fuel for space heating. Costs for other fuels would range as low as $111.80 per season under the above conditions and at current prices.[8]

Looking at it another way, the average cost of heating the above house under the hypothetical circumstances outlined and at current prices for nine different methods and fuels (excluding propane) is approximately $160.00 per season.[9] Therefore to become really competitive, price-wise, propane must sell to the consumer at an average price of $2.00 per 100 lb. cylinder or 10 cents per gallon. However, it could well displace manufactured gas, hand-fired coke, hand-fired anthracite, stove coal, and even oil-fired furnaces, at a higher price. For instance, one gallon of propane contains 100,000 B.T.U., and efficiency is rated at 80%, thus providing 80,000 B.T.U. per gallon. Oil has 168,000 B.T.U. per gallon and is 70% efficient, thus providing 118,000 B.T.U. per gallon. Propane, therefore, "breaks even" with oil if it sells for 80/118 of the price of oil per gallon. This works out to 11 cents to 14 cents per gallon for propane, or from $2.20 to $2.80 approximately per 100 lb. cylinder, the price of oil varying by locality. Similar procedures can be used for

[8]*Oil-Heat*, September, 1950, pp. 22-23.
[9]Ibid.

comparison with the various grades and prices of coal, and manufactured or natural gas.

From the foregoing it can be seen that on a price basis alone propane is not a competitive space heating fuel in Canada. However, if the economies of tank truck distribution, when it is allowed, halve the retail price of propane, the present price of approximately 36 cents per gallon (when purchased in 60 cylinder quantities annually) may go as low as 18 cents per gallon. Such a reduction would place propane in a very marginal position with respect to other fuels, and any upward movement in their prices would bring in a large effective demand for propane for house heating. Similar desirable results will be obtained when furnaces designed to use propane more efficiently are marketed. Where price is not the important criterion; for example if fuel oil, coal, or gas are in scarce supply or unavailable, propane will dominate this field. In any event, in the years to come propane will doubtless receive widespread attention, and should eventually come into its own as a substitute fuel for space heating in the home, factory, and office.

The Problem of Distribution

This phase of the industry is particularly obscure. The industry has no history to speak of, and the ultimate lines of distribution are far from clearly defined at present. An outsider gains the impression that a feverish effort has been made to open up the market holus-bolus. The aim has been to move the product from producer to user by whatever means circumstances dictate, and to win customers without regard to the economies of servicing their needs. Certainly a completely rational, economical approach to the problem of distribution is slowly being developed, but in the past, and even at present to a certain degree, impractical and costly methods of distribution are all too prevalent.

Canadian distributors have only begun to skim the cream off the potential market. For various reasons, mainly lack of capital and scarcity of the product, little aggressive selling has as yet been undertaken. Potential domestic and commercial customers may be broadly classified geographically: (1) suburban areas just beyond the gas mains, (2) smaller cities and towns with no piped gas system (or an inadequate supply), (3) farms, (4) seasonal resorts, summer homes, cabins, and commercial establishments, (5) a broad and varied miscellaneous group. Frequently the customer has taken the initiative in signing up; perhaps because he or his neighbour has previously used gas, he is sold on the product, finds it unavailable, and comes seeking the service. Then, too, dealers employ selective canvassing of leads given by customers, or make phoned or written enquiries. Generally speaking there is more sales resistance in small towns where there is no gas system because of: (1) no knowledge of the merits of gas, (2) lower average income, (3) slower acceptance of

modern conveniences. Exhibits and demonstrations at picnics or country fairs should be a sure-fire way of developing leads in these areas.

One form of distribution is shipment of the gas by the producer, after it has been liquefied and dehydrated, by railway tank cars to the wholesale distributor who owns a bulk storage plant, thence to the consumer via cylinders delivered by truck. There are, in actual practice, many variations. Frequently a retail distributor (who may or may not sell appliances as well) intervenes between wholesaler and user. Large industrial users, whose needs require them to have large storage capacity, often buy direct from the producer in tank car lots. Tank car prices are the same whether one carload or fifty is purchased.

Imperial Oil, the colossus in the Canadian picture, straddle the market. By a system of bulk storage plants, sub-stations, and retail dealer agreements, they control the distribution of propane from the time it is produced until it is ultimately used. From an economic point of view, they have found that this is not entirely satisfactory, and are presently engaged in consolidating their marketing gains and, in a sense, shortening their lines of distribution. When individual customers whose annual needs are not great are widely scattered within a 20, 30 or 50 mile radius of the bulk storage cylinder filling plant, and even beyond, the cost per unit sold rises sharply. As a result, Imperial Oil found themselves carrying many marginal and sub-marginal accounts. It appears that they were forced into the position of extensive retailing simply because there was no one capable of performing the function to their satisfaction at the time; or perhaps no one was willing to risk the fairly heavy capital investment involved in setting up a retail franchise. Although they have been marketing propane for only three years they have been extremely successful in winning new accounts. When a new area has been built up sufficiently, they appoint a retail distributor in a centralized location relative to these customers, and sell him the exclusive franchise. He can then build upon this solid nucleus of customers and develop the area thoroughly and systematically. He can risk the capital investment required with the assurance of a constant supply of gas for his customers, and without any "waiting returns" period to add to his financial burden. In a similar manner Imperial are sloughing off their sub-stations. These were bottle storage points which carried equipment and personnel for making installations and providing maintenance and repair services for local accounts. The sub-stations are now being sold to independent dealers who purchase the customer accounts and equipment and are given an exclusive franchise in that territory in return for the promise to use only the Essotane product.

In future, Imperial's bulk storage plants will likely limit their activities to wholesale distribution, with the exception of those customers located fairly close to the plant itself, to whom they can eco-

nomically continue to retail the gas. They will service a network of independent dealers who in turn will look after their local customers; they will likely service the larger domestic and commercial accounts direct; and finally they will deal directly with industrial users too small to purchase in tank car lots from the refinery, and too large to be serviced economically by cylinders. All of these functions will be tremendously facilitated when the preponderance of deliveries is made by tank truck rather than by cylinders. Delivery by cylinder involves handling 2 lbs. of steel for every lb. of gas distributed. This means that dealers should be encouraged to develop their areas to the extent that they can afford to install their own storage equipment, on a relatively small scale, from which to fill cylinders. In addition, the larger accounts should be encouraged to operate their appliances from storage tanks rather than from complicated and costly cylinder hook-ups. (Batteries of ninety cylinders are not uncommon to-day.) Storage tanks should be a minimum size of 400 Imperial gallons' capacity.

The independent owner of a bulk storage plant will continue to serve as a wholesale intermediary between producer and consumer. His activities will parallel closely those outlined above. The big question is: how will he fit into the scheme of things in the future? The answer is not obvious, and largely depends upon the policy set by Imperial Oil. For instance, production of propane for public distribution has been infinitesimal in Ontario to date. All of Imperial's bulk plants import the major portion of their total supply from the U.S.A. at the same price as does the independent wholesaler; thus the independent can compete successfully with Essotane distributors. However, starting in 1951, Imperial will be in a position to produce more and more of their own needs at a cost much lower than the cost of importing gas from Texas. At the same time, if Imperial are allowed to transport propane by tank truck it is estimated that the price to the user could be cut in half. For several months, even years, they will be able to produce in Ontario only sufficient for their own needs, and unless they apportion a certain allotment directly to their independent competitors, these men may still have to fill their requirements by importing from Texas. Hence the independents would be wholly unable to compete with Essotane rates, should Imperial decide to cut the retail price. At present the independent is firmly entrenched in certain areas, with a sizeable group of loyal customers and a few dealer set-ups. Does this mean that Imperial will use their potential advantage to squeeze him out of the business and take over his territory? Possibly so, but despite the fact that Imperial are in the marketing end of the business to stay, it seems hardly likely for a number of reasons.

First of all, in the near future, other competing oil producers will be in a position to supply independents with propane at highly com-

petitive prices. True, their ability to supply will be limited, but Imperial will probably want these already established independents to cooperate with them rather than see them lost to their competitors. For instance, it is rumoured that Sun Oil is preparing to pipe propane from Toledo when they establish their Sarnia plant. Canadian Oil, also establishing in Sarnia, will have propane available. British American Oil now turn over their propane to Shell Oil for dehydration and marketing, and Shell's own supply is increasing. None of these companies wishes to market the gas at retail, or even wholesale, except to the large industrial users. Thus by the end of 1951 the independents may look to sources other than Imperial Oil or Texas for their gas supply. Secondly, Imperial has no immediate incentive to cut retail prices because the demand for Essotane at prevailing prices far exceeds their present ability to supply the market. This condition is expected to exist at least until 1952, at which time Imperial will probably cut prices gradually in order to capture a wider market for their ever increasing production. A third factor is that many producers in the United States have found by long experience that an independent wholesaler can develop a marketing area more completely, more efficiently, and more economically, than the producer can himself. If Canadian wholesalers can demonstrate this skill effectively it would seem that their future is assured. If they cannot, they will be out of business eventually anyhow. Fourthly, the present-day attitude of the various governments, and public opinion as well, seems to be diametrically opposed to "bigness". When a corporation assumes too obviously the appearance of a gigantic monopoly it must be prepared to fight a welter of taxes and other legislative restrictions and restraints plus a general loss of public good-will. Finally, and most significantly, over the years the basic policy of Imperial has been "live and let live". They have favoured a policy of mutual cooperation with their competitors, and their reputation for fair dealings has been well established. Thus it seems unlikely that Imperial will risk the capital required to dissolve their marketing competitors in the propane industry, especially since the operation would be fundamentally distasteful to them, and since the future market should be big enough for all.

The problem of supply is by no means the only one facing the independent bulk plant wholesaler. As pointed out earlier, he has a certain retail function to perform as well, and in his appointed capacity it is his responsibility to set up an economically effective retail network which will ultimately yield intensive, low-cost distribution within a certain area to a host of users with varied annual gallonage requirements. Can this best be accomplished by a retail dealer network serviced by a wholesale bulk plant? Based upon a cursory survey of U.S. marketing experience, the evidence strongly favors such a set-up.

First of all, it is very costly to distribute gas by cylinders to small

users scattered over a wide area from the bulk plant; and attempting efficient maintenance and repair of installations on the same basis is even more uneconomical. Yet it is imperative that the individual customer, no matter how small, be given as good service as the electric and gas utilities are providing. Secondly, distributors must aim at getting *all* appliances on gas in any one home; i.e., not only a range but a hot water heater and refrigerator as well, for this is the best assurance that any one domestic account will be profitable. This sort of intensive selling can best be achieved by local dealers. Thirdly, the selling costs involved in developing a new area extensively will be greatly reduced if the goodwill and local connections of a well-established and reputable dealer are utilized. This point does not apply to Imperial Oil, whose own good name is well established throughout Canada, but is especially true in the case of a little known independent wholesaler.

Granted, then, that a retail dealer network is essential, how does one go about getting the right man? An ideal dealer is a keen merchandiser and a good salesman, efficient in sales promotion. He must be prepared to give service plus. He must be a good manager, selecting his customers on an economical basis and building a territory as closely knit as possible, in order to keep a tight control over service and delivery costs, for his profit margin is not large. If established local dealers are not satisfactory or are unwilling to participate in the venture, new ones must be appointed. The most successful and profitable dealership combines appliance sales with gas sales. But appliance manufacturers usually have close, long established relationships with the local dealers and remain loyal to their old customers. Consequently, if a new dealer is set up he must also find new sources of supply for appliances as well, or limit himself to the less profitable business of distributing gas service only. Furthermore, not many dealers are prepared to make the kind of investment that is needed in such a new and untried industry. It has been found that until a dealer has built up a territory of at least 200 customers he will lose money, in that he will be investing without an adequate return. After this point, however, the return on investment tends to pyramid quite rapidly.

Just how much money a retail dealer must invest is hard to say. It is unlikely that he will build even a small storage plant to start with, or that he will invest in cylinder filling facilities, which are practicable only if he is servicing a very large number of customers. However, when wholesalers are prepared to make tank truck deliveries, and the market expands, such facilities will become imperative.

Initially, the dealer must buy cylinders and regular equipment outright, or rent such equipment from the wholesale bulk plant. Should he buy the equipment from the wholesale bulk plant, he will in turn sell it to the user, or rent it to him on a long term basis. The former plan would be the more economical, but it would leave the customer

free to buy gas wherever he likes, whereas if the dealer retains ownership of the equipment the customer is under contract to use only his gas. On the other hand, the dealer will be responsible for maintaining the equipment in good condition, since it is his own, rather than exacting a profitable fee from the customer for performing this service. Similarly, if the dealer rents this equipment from the wholesaler the latter will be responsible for maintaining and painting the cylinders, valves, regulators, etc. In general, most dealers can finance the purchase of the equipment more cheaply than the 17% of the capital cost that the wholesaler's rental and service charge amounts to annually. It is too early to estimate the effective life of this equipment, but it is probably in the neighbourhood of 20 years, and the cost of servicing equipment is negligible. There is another saving in purchasing the equipment (in addition to the saving of the high rental charge) in that wholesalers customarily charge less for the gas itself if the dealer owns the cylinders.

Thus the present picture suggests that dealers should purchase the equipment outright, and in turn rent it to the customer. Logically, maintenance and service charges on this equipment should be included in the cost of the gas. The equipment that goes into the average domestic installation consists of two high-tensile cylinders of 75 lbs. tare weight, one Rego pressure regulator outfit, double automatic, an aluminum Weather Hood, and cylinder bases, shut-off cock, tubing, range connectors, flare nuts, etc. Allowing an extra half cylinder for every two in use, to take care of those in transit to and from the filling station, or in storage in the dealer's yard, the total material cost is around $85 to $90. Add labor cost, truck mileage, overhead, etc., and each installation costs in the neighbourhood of $100.

When Imperial Oil first started in the business they charged only a nominal $15.00 per installation to defray this expenditure. Then they levied a $40.00 installation charge in return for a five-year contract for gas. This was, in a sense, a lease or rental charge of $8.00 per year on the equipment. However, at the end of five years the contract was to be re-negotiated at no additional charge to the customer, Imperial retaining title to the equipment and paying all service and maintenance charges except on the actual appliance in use. This appliance was given one year's free service in accordance with the customary manufacturer's guarantee. For the future Imperial are toying with the idea of having the consumer buy the equipment outright at a cost of $100.00. Where they have turned over their customers to local retail dealers, these dealers have paid for the equipment, etc., at a reduced charge below cost. A dealer's total capital investment has been in the neighbourhood of $5,000 to $10,000, depending on the size of the customer group he has taken over.

The typical retail dealer will probably use some combination of the above methods to defray this capital expenditure for new installations.

It is the opinion of the writer that a plan involving the customer's paying for the total capital expenditure over a long period in small monthly amounts would encounter less sales resistance than a flat fee of $100.00, or even a scheme of installment or credit buying. For example, with interest at 6%, amortizing the cost of the installation over a period of 20 years would involve the customer's paying less than $1.00 a month, even if he were responsible for the total expenditure. This charge could take the form of a flat rental, the retailer retaining ownership of the equipment. Better still, this charge could be included in the cost of the gas. Since average domestic requirements annually exceed four cylinders, an additional $2.50 charge per cylinder for the initial four purchased annually should easily take care of the capital charge and cover all costs for maintenance and repairs to the equipment.

From the foregoing account it is obvious that, no matter what methods he adopts, a dealer should have in the neighbourhood of $20,000 capital plus a store, truck, and at least three men for selling the appliances and/or service, to make installations, deliver gas, and provide maintenance and repairs, before he can handle a 200-customer route and successfully build up from that nucleus. Many successful American dealers combine their activities in gas with some other enterprise, say a water softener business, in order to cut costs. They also attempt to build as big a gas load as possible with each established customer. Thus they have found that they can make a living from the domestic load alone, but before he can realize the big profits a dealer must capture the commercial and small industrial accounts.

Now for a closer look at the wholesale distributor. His capital costs are for a bulk plant, land, perhaps a railway siding, trucks, and a large investment in cylinders. He may also be called upon to help finance the retail dealer network he builds up. Other aids to the retailer, and to large customers, include training, merchandising advice, circulating the latest data pertaining to the industry in all its various aspects, emergency service, and skilled engineering service and assistance on the larger installations. The wholesaler may or may not own a bulk plant. Occasionally some large industrial plant puts in its own bulk storage and leases bottle filling facilities to a distributor in order to reduce costs. This has proven satisfactory, and should be an excellent solution to the problem of distributing gas in the sparsely settled areas in Northern Ontario. In Kingston, the P.U.C. owns a propane bulk plant to help meet peak gas loads on the mains, and Frontenac Blue Flame distributors have an agreement for bottle filling with them which has proven satisfactory to both parties.

A suggested method for distributing propane among the resort areas, which, because of the seasonal nature of the demand, and the small volume per customer, has hitherto been a market of questionable

value, is for the wholesaler to establish a small storage tank (say 1000 to 3000 gallons) in a central area, to be serviced by tank truck from the parent bulk plant. This bottle filling station could be in charge of a student, or person seeking summer work only, and the customers could bring their own twenty lb. cylinders for re-filling on a cash-and-carry basis. About two such cylinders fill average requirements for a whole season. Such a station might also be utilized as a re-fuelling point for trailers equipped with propane, and later for trucks and buses, and perhaps also for filling adjacent retailers' requirements.

Such methods of distribution, of course, increase the already heavy burden of capital expenditure that a wholesaler is forced to assume. However, as Mr. D. C. Ferguson has pointed out in his penetrating brief, "Liquid Petroleum Gas—A New Industry in Canada," it is a highly attractive capital investment. He says, "Practically every dollar invested commences immediately to earn its full return. Since the major part of the money goes into equipment at the consumers' premises the rate of inflow of capital can be proportioned almost exactly to the growth in number of customers and consequent revenue. This is in striking contrast to telephone, electric, or piped gas utilities where large capital has to be tied up in switchboards, pole lines, power plants, and gas mains long before there are enough customers to use them to the full."

One outstanding characteristic of the propane industry is that it has always been capital hungry. A man must be especially prepared with adequate capital before entering any phase of the business. A wholesaler must have an assured volume of at least a million pounds (10,000 cylinders) before it will pay him to have his own bulk plant (costing at a minimum in the neighbourhood of $40,000). Expressed another way, before this type of gas storage and cylinder filling plant could hope to earn its cost, the wholesaler would have to serve from 3000 to 5000 customers. If all these were domestic customers (an improbable assumption), at $100.00 per installation the necessary capital required could run to half a million dollars.

A concensus of opinion indicates that a small wholesale bulk plant, plus cylinders, regulating equipment, service men, trucks, etc.,, would cost approximately $60,000. On the average, $100,000 will develop the first 1,000 customers; $250,000 more will develop another 4,000. About $600,000 would be required to handle 10,000 accounts. Approximately two million dollars' capital would take care of 50,000 to 60,000 customers.[10] This is no poor man's business. The profits are there (an estimated 16% after taxes, on gas sales alone), but it costs an exorbitant amount to get them. Additional profits can be gained from the wholesale distribution of gas appliances and equipment, and from engineering services.

[10]Op. Cit.: D. C. Ferguson.

The Pricing Problem

The problems of profit, methods of distribution, and market potential are all interrelated with the pricing problem. Generally speaking, as far as pricing is concerned, Imperial call the tune and the rest dance to it. But there are other considerations. For instance, in localized areas, dealer personality, faster more efficient service, and more convenience, are all minor forces offsetting small price diferentials. Moreover, it seems evident that present retail price structures, established by Imperial, do not provide sufficient margins for the intermediary wholesaler, and more especially the retailer, to properly perform their respective functions.

Let us start with the producer in an examination of prices. American producers have been in the business for thirty years, more or less, and their propane sells for approximately 4 cents per Imperial gallon, whereas in Canada the price is 9.5 cents per Imperial gallon, both prices f.o.b. the refinery. Despite the higher cost of Canadian production, there is certainly an adequate profit margin here. As more competitive conditions prevail, and as the economies of volume production and distribution are realized, this price could logically go down to around the 6-cent level and handsome profits would still be realized.

To wholesale bulk plant operators, large industrial users, etc., present tank car prices (8400 gallon lots) f.o.b. purchaser's siding vary with the locality. For example, the price is 10.8 cents per gallon at Chatham, 13.3 cents at Sudbury and Ottawa, 10.9 cents at London, 12.6 cents at Lindsay, and 11.3 cents at Woodstock. Wholesalers, in turn, supply retailers with gas at an estimated $5.50 to $6.50 per 100 lb. cylinder (say $6.00), or approximately 30 cents per gallon, since there are 5.1 lbs. of propane per gallon. To small domestic and commercial users they sell at an average rate of, say, $10.00 per 100 lbs. or 50 cents per gallon. Thus the wholesaler's gross margin is between 18 cents and 39 cents per gallon, perhaps averaging higher than 25 cents per gallon. After deducting all costs, including a return on capital invested, and after taxes, profits are estimated to be 16 cents per $1.00 of gas sold.[11] Assuming a territory of a million lbs.' annual volume or approximately 200,000 gallons, this amounts to a gross margin of at least $50,000 and a minimum net profit after taxes in the neighbourhood of $15,000 from the sale of gas alone. This figure, though largely hypothetical, reflects to a fair degree the healthy profit characteristics of the propane business from a wholesaler's point of view.

It has been found that the average Canadian customer in actual practice uses from 80 to 135 gallons per year, or from four to seven 100 lb. cylinders annually. Approximate usage by the domestic consumer is estimated as follows: for cooking alone 400 pounds per annum; cooking and refrigeration 700 to 900 lbs. per annum; cooking and water

[11]Estimates established by Duncan C. Ferguson, Reg. P. Eng.

heating 1000 lbs. per annum; cooking, water heating and refrigeration 1200 to 1600 lbs. per annum.[12] These figures indicate that dealers have a real load-building job to perform among existing users as a means of building profits. The user will benefit as well, for the more he uses the cheaper per gallon the gas becomes, because of the sliding scale rates in force. For example, gas retails at approximately 57.5 cents a gallon for the first 40 gallons or 200 lbs. and decreases to an average of approximately 44 cents per gallon at the 200 gallon or 1000 lb. level.

If we assume that a retailer has 200 customers, and further that each customer uses six cylinders of gas annually at an approximate cost of 50 cents per gallon or $10.00 per cylinder (excluding installation or service charges), total sales would amount to $12,000; the gas would cost approximately $7,200; and his gross margin would be around $4,800 from the sale of gas alone. This is by no means sufficient to make it a worthwhile venture from his point of view, considering the investment he has to make. He would have no incentive to continue, since his operating costs and overhead would turn it into a losing proposition. For example, a truck would cost at least $800 per year to operate, including depreciation; salaries of three men at least $6,500; rent $750; return on capital at 10%, say, $2,000; and still to be reckoned with are the many other minor expenses, such as heat, light, advertising, promotion, etc. It is very clear that under present price structures the customer (or wholesaler) *must* pay a substantial proportion of the equipment cost, and that the retailer must combine the other devices suggested earlier if he is to make a profit; i.e., sell appliances, operate a supplementary business, control costs by maintaining a closely knit customer area, build the load among existing users, etc. Even so, it appears without deeper probing, that to break even in gas sales alone, at present prices, the retailer must sell at least 2500 cylinders annually. In the final analysis, either the consumer must pay more or the retailer must pay less for his gas.

And what, at the present time, is the consumer getting for his money? It has been generally conceded that propane cannot compete with natural gas at present prices. There are serious doubts in the writer's mind that this is necessarily so under all conditions. For instance, investigation has shown that with antiquated water heating equipment, but a modern range, natural gas costs run to $60.00 per year. Additional outlays for new heater coils may run as high as $30.00 per year. In any case, the total cooking and hot water heating costs with natural gas range from $75.00 to $90.00 per year. It is estimated that propane could do the same job, at present prices, for about $89.00 (assuming usage of 1000 lbs. annually). This evidence, though inconclusive, should serve as a warning to operators not to take it for granted in every instance

[12]Estimates established by Duncan C. Ferguson, Reg. P. Eng.

that they cannot displace natural gas, and indicates that every potential customer's circumstances are worthy of investigation.

According to Union Gas estimates, the average domestic account is 2200 cu. ft. per month. (No figures are available breaking this down by appliance, but at most it is for cooking, water heating, and refrigeration. A large proportion of Union Gas customers use electric refrigerators, and many use electric hot water heaters rented from the P.U.C.) At present rates this gas costs $35.50 per year (net). Similar propane costs would be something over $44.00 per year. Thus propane would not be a serious competitor for natural gas until the price is around $8.00 per 100 lb. cylinder.

On the other hand, even at present prices propane is cheaper to use than manufactured gas. Union Gas officials claim that manufactured gas rates are similar to their own. But manufactured gas (550 B.T.U.) is only half as efficient as natural gas (1050 B.T.U). Therefore it would seem reasonable to suppose that the average user of manufactured gas spends at least $50.00 per year for cooking alone, as opposed to the $44.00 it would cost for propane. The differential would be even greater if both cooking and water heating were involved.

The average home heating usage is 150,000 cu. ft. per season at an approximate cost of $165.00 with natural gas, or $325.00 with manufactured gas. These are well below the present estimates for propane, but when the "bugs" are ironed out of present home heating appliances, propane will eventually come into its own in this field as well. The industrial market presents much the same picture, only more favourable for propane. It still cannot compete with natural gas even though industrial rates for natural gas are higher than domestic, while the opposite prevails with propane. However, manufactured gas is far more costly to the industrial user than propane, and always will be.

Imperial Oil distributors have found that their present rates are competitive with electricity at 1¼ cents per K.W.H. based upon the relative efficiencies of both fuels in use. To illustrate, in the average cooking range propane is up to 40% more efficient than electricity in top-burner cooking, where nearly 80% of the total cooking is done.[13] In theory, and under laboratory conditions, comparative efficiencies show that propane at 12 cents per lb. is competitive with electricity at 2 cents per K.W.H. (21,650 BTU per lb. of propane).[14] Statistics published in the forty-first Annual Report of the H.E.P.C. (1949) illustrate that propane is a vigorous competitor of electricity, and will continue to make serious inroads into that market as time goes on. For example, in 1947 (electric rates have since gone up 10%) the average domestic bill was

[13] *Butane-Propane News*: September, 1950, p. 64.

[14] Op. Cit.: July, 1941. C. C. Turner, "Bottled Gas Marketing."

at the rate of 1.01 cents per K.W.H. and the average commercial light service bill was at the rate of 1.29 cents per K.W.H.

More important, 79,000 farm service users paid 1.66 cents per K.W.H.; 75,000 hamlet users paid 1.83 cents per K.W.H.; 11,000 rural commercial users paid 1.72 cents per K.W.H.; and 27,000 summer resort users paid nearly 3 cents per K.W.H. Here are close to 200,000 potential propane users. In areas where private power companies provide the service; e.g. Kawartha Lakes district, rates are even higher. These areas should be very fruitful for developing the domestic and commercial propane market, and to a lesser degree the industrial market.

Both electric utilities and propane distributors will win or lose against each other on the basis of their success in building load volume per user, assuming price differentials remain relatively the same. For instance, in Ontario the average rate for the first sixty K.W.H. is 2.5 cents per K.W.H. per month (lights and small appliances; e.g. iron, vacuum, radios, require only 40 K.W.H. per month on the average). With the addition of a range, refrigerator or water heater the rate goes as low as 1 cent per K.W.H. for urban domestic installations. Propane rates are similarly designed on a sliding scale, but do not favour the volume user to the same degree that electricity does. The overall price of propane will undoubtedly go down in the future, and volume sales will be an important factor stimulating this drop.

The basic electric load is lighting. Next comes the radio, vacuum, iron and miscellaneous small appliances. The electric refrigerator is third. Fourth is the electric range; the water heater comes last. Electric rates are such that the first three classifications of service fall within the upper rate bracket, with distinct economies if a range and water heater are added. Propane rates are presently designed to encourage additional consumption, but not sufficiently so to yield the tremendous volume of business they are capable of obtaining. By and large propane has a better advantage in the commercial and industrial markets, but the same problem exists there also. If present predictions prove true, that propane prices will be halved within the next year or so, Canadian production will never keep up with the demand. But for the immediate future propane can compete with electricity, on a price basis, only in certain isolated cases where electrical consumption is too low to qualify for the cheap rates, and in the relatively sparsely populated geographical areas where electric rates are unduly high, and the service undependable.

Future Price Trends

The following table is based upon electric rates presently prevailing outside the city of London. The estimates of propane costs are based upon existing average rates of usage, and an assumption that current prices have been halved. Typically, the user of electricity consumes 40 K.W.H. per month for lighting and small appliances, 40 K.W.H.

COMPARISON OF PROPANE AND ELECTRIC COSTS
(Bi-Monthly)

	Electric Bill				
Customer Has					
Lights and Small Appliances (40 K.W.H.)	$1.92	*Electric Bill Total*	*Cost Electric Marginal*	*Cost Gas Marginal*	*Advantage of Gas (Disadvantage)*
Customer Adds					
Range		$6.12	$ 4.20	$ 3.66	$ .54
Refrigerator		3.84	1.92	2.81	(.89)
Water Heater		9.72	7.80	4.96	2.84
Range and Refrigerator		6.84	4.92	5.60	(.68)
Range and Water Heater		11.52	9.60	7.42	2.18
Refrigerator and W. Heater		10.44	8.52	6.83	1.69
Range, Refrigerator and Water Heater		12.24	10.32	9.17	1.15
Customer Has					
Lights, Small Appliances and Refrigerator (80 K.W.H.)	3.84				
Customer Adds					
Range		6.84	3.00	3.66	(.66)
Water Heater		10.44	6.60	4.96	1.64
Range and Water Heater		12.24	8.40	7.42	.98
Customer Has					
Lights, Small Appliances and Range (140 K.W.H.)	6.12				
Customer Adds					
Refrigerator		6.84	.72	2.81	(2.09)
Water Heater		11.52	5.40	4.96	.44
Refrigerator and Water Heater		12.24	6.12	6.83	(.71)
Customer Has					
Lights, Small Appliances, Refrigerator and Range (180 K.W.H.)	6.84				
Customer Adds					
Water Heater		12.24	5.40	4.96	.44

for refrigeration, 100 K.W.H. for cooking, and 300 K.W.H. for hot water heating (automatic).[15] Rates outside the City of London are 4.8 cents for the first 120 K.W.H. per month and .8 cent per K.W.H. for everything thereafter.

The above table reflects the inability of the gas refrigerator to compete successfully with electricity. This is due more to the inefficiency of the appliance than to the high price or ineffectiveness of gas. A new type gas refrigerator is expected to make its appearance in 1951 which is claimed to cut fuel consumption in half; i.e. by 150 to 300 lbs. If such claims prove true the price disadvantage of gas for refrigeration will be largely eliminated, and the advantages of gas, where multiple installation of appliances including the refrigerator is involved, will be increased considerably. The table further reflects the great advantage that a gas water heater over an electric heater. The gas range alone is slightly more economical than the electric range, but it would seem that the price break in existing rates should be a little sharper after the initial two 100 lb. bottles have been consumed. The range is usually the first appliance installed in a home, and paves the way for others. Four hundred lbs. is the average annual consumption for cooking. A larger price break for this quantity would clearly demonstrate to the customer the economy of gas and give him the incentive to install more gas appliances. Among other things, the table verifies the fact that prices to the domestic user must be cut by 50% before propane will rank as a serious competitor to electricity.

Are prices likely to fall by this amount? Responsible men closely associated with the industry predict that they can and will as soon as widespread distribution by tank truck goes into effect, and as soon as Canadian production is geared to meet the vastly increased demand. Both developments are expected during 1951. In the West where huge quantities of the gas are available, and widely distributed in bulk by road transport, propane sells for 18 cents per gallon as opposed to Ontario's 45 cents to 50 cents per gallon for cylinder gas. The industry in Canada is as young as 1947, at which time gas was swelling upwards of $1.00 per gallon. Since that time the trend of prices has been dramatically down, and a further 50% cut in the future seems entirely logical. The future growth of the Ontario and Canadian market is likely to be in direct proportion to the drop in retail prices. Unfortunately, reliable figures on the production capacity of Canadian producers—an important factor in future price developments—are unavailable at this time, but one gains the impression that tremendous volumes of propane will become increasingly available for distribution by the end of 1951.

The Potential Market

Some idea of propane's potentialities may be gained from a glance

[15] *Butane-Propane News*: June, 1938.

at U.S. statistics. It took the automotive industry thirteen years to expand its yearly car output from twenty thousand to two million; it took L.P. gas ranges only fifteen years to match this ratio of expansion—just two years' difference. Other gas ranges and electric ranges took twenty-five years to achieve a similar growth. It is estimated that Canada today is only at the same stage in the development of its L.P. gas industry as was the U.S. in 1933. The really large-scale expansion is yet to come. In 1933 the U.S. used 16,625,588 gallons of propane; in 1950 the figure was approximately three billion gallons, nearly a two hundredfold increase.[16] The growth trend curve is levelling off, but healthy gains are being recorded every year, and approximately half a million new users are expected to be added in 1951.

The Canadian picture is obscured by the lack of production statistics. However, the following figures give some indication of the developments taking place in this country. According to a report issued by A. T. Coumbe and I. F. Avery of the U.S. Bureau of Mines, Canada imported 15,044,000 gallons of propane in 1945; 30,379,000 gallons in 1946; 31,591,000 gallons in 1947; 26,681,000 gallons in 1948; and 31,195,000 gallons in 1949. The volume of import has stabilized around 30,000,000 gallons because of Canadian petroleum producers' increasing ability to meet the rapidly expanding demand for propane. The reports published by the Dominion Bureau of Statistics for the Department of Trade and Commerce entitled, "The Petroleum Products Industry," show that total Canadian production of propane in 1947 was so small that it was reported under the caption "other products", [17] and only two companies were producing at all. By 1948 (the year imports fell off) Canadian production was sufficient for propane to rate separate mention. The 1948 report showed production at $669,113,000 value at the refinery, probably around six million gallons. No later figures than these are available. As an interesting side-light to this report, the Dominion Bureau of Statistics reported that by 1948 over a billion and a half Imperial gallons of furnace, boiler, stove, and range oil were consumed annually in Canada for cooking and heating. This figure should now approximate two billion gallons—a vast target for propane distributors to shoot at.

As another indication of the Canadian potential, at the annual meeting of the L. P. Gas Association, District 8, in February, 1949, it was reported that there was a need for 20,000 to 40,000 cooking ranges in Canada. It was estimated that the Canadian market could absorb from 60,000 to 70,000 cylinders if they were available. Yet cylinder production for Canada, in 1951 alone, is expected to be around 100,000. This could mean 25,000 new users of propane in 1951.

16 U.S. Bureau of Mines Statistics.

17 Report for 1949, Table 14, p. 8.

Because a market potential depends upon so many intangible circumstances surrounding the development of a new industry, it would be folly to forecast, except in the most general terms, any long range trend. However, one distributor estimated that, sooner or later, as many as one family in five will be using propane in one form or another in Canada. This could mean an annual domestic load upwards of a hundred million gallons within the next fifteen years. Since the most progress, relative to the population, has been made in the Prairies, it is unfortunate that the present lack of statistics has limited this survey to the Ontario market potential for 1951 only. A forecast for the whole Canadian industry would be a more realistic and meaningful interpretation.

The following table depicting the development of the propane industry in Ontario (prior to 1947, activity was negligible) is based upon material collected from many varied sources. There are no formal figures available, but the margin of error should be less than plus or minus 15% for the figures presented.

THE PROPANE MARKET IN ONTARIO

Year Ending	*Imperial "Essotane" Customers*	*All Other Customers*	*Total Propane Customers*	*Average Annual Consumption Per Customer*	*Total Annual Consumption*
1947	100	2,200	2,300	60 gals.	138,000 gals.
1948	700	2,500	3,200	80 gals.	256,000 gals.
1949	7,256	3,300	10,556	100 gals.	1,055,600 gals.
1950	10,164	5,800	15,964	125 gals.	1,995,500 gals.
1951 (Est.)	11,350	7,650	19,000	130 gals.	2,470,000 gals.

The table reflects the tremendous success of Imperial's vigorous marketing program since it got underway in 1947, and the dominant position the company now holds. There are more than six times as many users of propane to-day as there were in 1947. It is estimated that there will be more new customers added in 1951 than there were total customers in 1947. Nor does this reflect the total existing demand. Because of inadequate production capacity Imperial have placed their distributors on a quota basis for adding new customers in 1951. Otherwise they alone could add at least four thousand new accounts with very little difficulty. The above table does not include the gas that is used by the refineries themselves, or that quantity used in the production of synthetic rubber. With these exceptions it is a fairly complete report on the volumes used by all customers in Ontario. It has proven impossible to further refine these customer figures by commercial, industrial or domestic accounts, or by type of use, or by geographic areas, on the basis of available data. The increase in the figures for average annual consumption per customer reflects the larger proportion of commercial

and industrial accounts to total users, rather than increased usage by domestic consumers. Furthermore, the volume used annually per commercial and industrial account is steadily increasing. In future, it is expected that the total number of customers will increase at a slower rate and average usage per customer will remain approximately the same, or slightly higher—an indication that the industry is achieving a certain stability.

The Marketing Outlook in Ontario for 1951

At present, Imperial have bulk plants at Maple (45,000 gallon storage capacity), Carleton Place (15,000 gallons), and Stratford (15,000 gallons). Their sub-stations, used for cylinder storage, etc., are gradually being turned over to independent local retailers. Both the Cornwall and Peterborough sub-stations have so been disposed of, and the one at Belleville will likely be released in 1951. No other bulk plants are scheduled for construction by Imperial at this time. Other bulk plants in Ontario are located at Sault Ste. Marie, Sudbury, North Bay, Woodstock and Kingston. It is unlikely that others will be established in 1951, unless plans for bulk filling facilities at Owen Sound reach fruition.

There is fairly dense distribution within a twenty to thirty mile radius of these bulk plants, and their sphere of activity generally encompasses a fifty mile radius. Broadly speaking, propane gas is now available in all the major areas of Ontario except the sparsely settled areas south of Algonquin Park and in Northern Ontario. Imperial dominate an area west of a line from Peterborough, south to Lake Ontario. The northernmost boundary of this area is a line from Peterborough through Midland and Penetang. However, the market is by no means saturated. The cream has scarcely been skimmed as yet, but the heavily settled areas will be covered intensively within a year or so. With the advent of road transport, and with greater production, 1952 and 1953 should be big years for the propane industry. For example, in South-Western Ontario alone one distributor has eager to obtain propane service from him an estimated fifty-one industries whose annual requirements are too small for a bulk storage plant and too large to be adequately handled by cylinder service. The total potential annual requirements of these industries alone run to nearly 600,000 gallons, but they will not likely be taken on until after 1951.

The emphasis in 1951 will be toward getting present users to install tank storage (at least 400 gallons minimum is required) and then servicing them by tank truck rather than by cylinders. Instead of soliciting an expanded marketing area, distributors will be consolidating present gains, and seeking more intensive distribution close to their bulk plants. Tank cars will continue to be scarce, restricting distribution and the addition of new accounts. Steel for storage tanks, cylinders, and appliances will be in short supply, but the propane industry should not be in a

critical position. Even in a defense economy, housing and essential appliances are given some priority by the government. In a defense economy, both for its own specialized purposes, and as a substitute fuel for coal, oil, gas, and electricity, which are frequently in scarce supply, propane will play a prominent part in the industrial as well as the domestic picture.

Summary and Conclusions

In the years to come propane will become an increasingly important factor in the economy of Canada, be it war or peace, welfare state or "laissez faire". Propane as a tractor fuel is already ripe for marketing. The local urban bus market should be ready for development within five years. Owing to the limited supply of propane, the lack of refuelling facilities, and the producer's economic considerations, cross-country passenger bus and truck operations powered by propane are much farther away. For similar reasons, propane will probably never be used universally as a passenger car fuel.

Propane must retail for at least $8.00 per 100 lbs. before it can compete with natural gas, but even at present prices it can displace manufactured gas for most purposes except space heating. If propane retail prices were halved production in Canada could never keep pace with the demand and it would be universally competitive with electricity. As prices stand, propane cannot compete with electricity in the domestic market except in minor instances. Propane is as yet too expensive to be used extensively for space heating, but will substitute for existing heating methods when furnaces especially designed to use propane efficiently are marketed, and as the retail price of propane finds a lower level.

Present distribution by cylinders is very inefficient and costly. Delivery by tank truck direct to storage tanks of at least 400 gallon capacity, located on the premises of the larger domestic, commercial and industrial users, will cut distribution costs tremendously. Retail dealers, as well, should be encouraged to install their own storage and bottle-filling facilties to distribute to the smaller customers.

The most efficient channel of distribution appears to be from the producer via tank car to the wholesale bulk plant, and direct to large industrial users with adequate storage facilities to buy in tank car lots. The wholesale bulk plant operator should distribute via tank truck where possible, or by cylinders, to a retail dealer network. He should also retail gas by tank truck direct to the larger domestic, commercial, and industrial accounts; and by cylinder to nearby small accounts. The retail dealer should, in turn, sell via cylinders to the smaller accounts, either filling his own cylinders or purchasing filled cylinders from the wholesaler. The retailer should also receive a commission from the wholesaler for customers he has developed whose needs are sufficient to be serviced directly by the wholesaler's tank trucks.

Present price structures do not provide a sufficient profit margin for the retail dealer to properly perform his job. Before lower prices to retail customers prevail, dealer margins must be widened to permit him to promote the product aggressively, provide first-rate service, and realize an adequate return on his investment. Retailers should combine an appliance and gas distribution business, or engage in some other complementary enterprise to reduce costs. To be really successful they should concentrate on building the annual gas load of each established customer, and supplement their domestic routes with as many commercial and industrial accounts as possible. The dealer should retain title to the installed gas equipment, but recover this capital expenditure by a small monthly charge to the customer included in the cost of the gas. This charge should cover all maintenance and repair costs on the equipment as well.

At present there are approximately 16,000 propane users in Ontario consuming about two million gallons annually. About 2000 customers will be added in 1951, and about 2½ million gallons should be consumed this year. Legislation permitting propane to be distributed by tank truck over Ontario highways; an increased supply due to expanded Canadian production facilities; an easing in retail prices; and more intensive promotion in the heavily settled areas already opened, are the big developments expected for the industry in 1951.

Planning a Company Library

Beatrice V. Simon
Assistant University Librarian
McGill University

Assuming that most businessmen to-day recognize the value of a specialized information service, Miss Simon draws a blueprint for organizing, staffing and financing a company library.

THE INFORMATION NEEDED to-day by business administrators, lawyers, scientists, bankers, and in fact anyone who wishes to carry on a successful enterprise, pours off the printing presses at such a rate that it is generally conceded that no individual can possibly keep up with current events, even in his own limited field, while engaging in an active career in that field. There has been increasing recognition over the past forty years that the best solution to the problem, as it affects any organization, lies in the establishment of a well organized system for receiving, caring for, and rendering these information sources available. There has been even more evidence recently that the best solution to the problem of digesting this information and bringing it to the attention of the people who need it, at the time they need it, is to engage an interpreter—a species of middleman—in the person of a qualified and experienced special librarian.

In the past few years several excellent articles, designed to bring the company library to the attention of the businessman, have appeared in Canadian publications. In the Royal Bank Letter for December, 1946,[1] the many ways in which a business organization might profit by the establishment of a good library are set forth in varied and illuminating detail. More recently, another fine presentation of this theme was published in *The Financial Post* of January 27th, 1951.[2] In addition to these, a number of American business periodicals, widely read in Canada, have carried similar articles on the library designed especially for the business organization. It might therefore be reasonable to assume that there are few Canadian business executives who are yet unaware of what a special library is, and what a special librarian can do.

The present article makes no attempt to retrace the points made in the above mentioned papers. It assumes that the value of the company library has been noted. It assumes that the alert businessman would be

[1] "The Business Library." Montreal Royal Bank, December, 1946.

[2] Davidson, Ruth. "Can the Company Library Help Your Firm?" *Financial Post*, January 27, 1951.

glad to know that such a service is within his reach. It *is* addressed to those who may be in some doubt as to how to go about the business of getting started, to those who may feel that they cannot possibly afford a library, and to those who may be labouring under the delusion that they are saving money by planning to scrap a library which has already been established.

The Company Library: A Management Tool

Recently, a large industrial concern in Canada abandoned its plans to organize a company library because it was shortly going into defense production. To anyone who is familiar with the rate at which smaller industries in the United States during the last war were forced to install a central information service, this decision on the part of the Canadian firm seems unbelievable. Make no mistake about it; any enterprise which operates successfully to-day is not operating in a vacuum. It is using information of all kinds in its daily operations, and it is paying for this in fairly large sums. Unfortunately, many of these expenditures are not readily recognized for what they really are, and in a cost analysis might easily escape classification as items to be charged to information service. For example, an advertising executive was once heard explaining a wonderful plan he had worked out, whereby he was going to have at his fingertips certain information he needed. He announced that he was going to pay a young man a considerable sum of money to do this work for him. On further questioning, it transpired that all he wanted was the kind of data which any self-respecting librarian could have discovered for him by using source materials which were already being received regularly in his own company, and could have produced in half an hour had all these sources been assembled in one place for quick and easy consultation. Undoubtedly he, and many other executives of that company, are spending equally large sums regularly for information service, but such items are being charged to the operating expenses of the departments concerned.

Even in those organizations which have libraries, failure to recognize the full potentialities of the service often costs the firm many hundreds of dollars. This may be the fault of the person in charge of the library, who has not the necessary qualifications to promote the service of his own department; or it may be the fault of management itself because it considers the "library" to be a cultural frill instead of the tool of management which it could and should be. There is a classic tale current in business library circles: it concerns the top executive of a famous manufacturing concern in the United States. A new librarian had just recently been appointed, and one morning this executive stalked into the library and tossed an elegant looking report on her desk, bidding her guard it with great care as it had cost him a sum which ran into four figures. After he had departed, the librarian glanced through the report

and discovered that there was not one single item in it which she could not have produced from the resources of the company's own library. It was obvious to her that her own executives were quite unaware of what they had a right to expect from their library and their librarian. Any competent and qualified librarian is capable of demonstrating the difference between a static library and a dynamic information service.

How Should It Be Organized?

It is on the first vital question of organization that top administration all too often founders in its deliberations on library policy. There are two distinct ways in which a company library may develop: it may end up as a storage place with a suitable attendant in charge, who gives grocery store service; or it may become a dynamic tool of management, an integral and vital working part of the organization, headed by a specialist. It rests entirely with management itself which type of library it has, and which kind of service it gets.

In starting an information service, as in the case of any other new division or department of an enterprise, it must be realized that it is only when the basic organization work is well and properly done that the project has a reasonable chance of survival and/or success. Many a business library has come to grief because of the company's failure to start the project off on the right foot. The best results are obtained when the library is organized as a separate division or department, with a qualified experienced person at its head who reports to an executive officer, or is one himself. Organized in this way, the library is able to serve all the departments impartially and can become a source of inspiration and assistance to workers at all levels.

In the early days of the special library in business, it was often the case that such libraries were started in the office of the head of a department. The need for technical information caused many an industry's research and development division to build up its own collection of needed reference sources; and the financial information needed by banks, insurance companies, and other financial institutions called into being the great libraries which exist in these fields to-day. It is not unusual to discover as many as three, or even four, distinct and separate libraries in some of the older organizations where libraries have been a part of the accepted scheme of things for many years. But this pattern is changing, just as the pattern of employment service has changed. At one time, the foreman went out into the company's yard each day and hired the men he needed in his own department. To-day, the centralized employment service is an accepted feature of a well organized business enterprise. There seems to be no valid reason why a centrally administered information service, which is as broad as the needs of the organization, will not work as well as any other centralized service.

LOUISIANA STATE UNIVERSITY LIBRARY

The special needs of specialized divisions can be as well, or even better, served by the establishment of branches or working collections wherever they may be needed—branches which can be placed under the care of branch librarians with special qualifications. For example, the librarian in charge of the technical branch might have a science degree as well as a degree in Library Administration. Or, it might even happen that there would be no real need for a special librarian to accompany the working collection to its destination. The members of a legal department of an insurance company, for instance, are so intimately acquainted with their sources of information that all that is needed for them is to have the legal collection right at hand. The company librarian needs only to know what is in the collection, and where it is. Control of the total information resources of the company, rather than physical centralization is what is really needed.

What Will It Cost?

The point has already been made that most business organizations are already spending varying sums on information sources and service, but it might be useful to mention briefly the costs to be considered in establishing a central library for a company. These fall into two categories: the initial costs of establishment, and the annual operating budget. The initial costs will include the necessary library equipment and the materials which will form the basic reference collection. While there is no need to make a show place of the library, there is need to make it comfortable and efficient, and the equipment necessary to make it so will be found to be a good investment. The cost of the basic reference materials will vary according to the nature of the collection and the proximity of a public library or other special libraries whose resources may be used easily and quickly. However, it should be borne in mind that in this, as is most projects, we usually get just what we are willing to pay for.

Because of the highly individual nature of the company library, there is comparatively little published information on the operating costs of an organized library service in any particular type of business. In a recent article in *Science* on "Building an Effective Technical Library,"[3] the authors give a very useful analysis of the costs of establishing and operating a library for a technical establishment. They give the formula of two per cent of the total budget of the organization for the first year or two, while the library is in the process of being organized, and about one per cent thereafter for current operating costs. In a brochure, *Public Administration Libraries*,[4] prepared by the Social Science Group of

[3]Jorgensen, W. E. and Carlson, I. G. "Building an Effective Technical Library". *Science*, v. 112, No. 2921, December 22, 1950, pp. 736-738.

[4]Special Libraries Association. Social Science Group. *Public Administration Libraries* : a manual of practice; prepared by a Committee of the Group. Chicago, Public Administration Service, 1948.

the Special Libraries Association, the section devoted to "Budgets and Finance" is quite helpful. It gives several sample budgets starting at an annual figure of $7,000 and going as high as $30,000. A useful feature is the suggested percentage to be applied to individual items in the budget as follows:

Books and Pamphlets	19%
Periodicals and Services	18%
Salaries	57%
Binding	04%
Miscellaneous	02%

This takes no account of new equipment needs and supplies, but in a business organization these are probably not considered in an operating budget. Another important item omitted is an allowance for the professional development of the librarian. It is as essential that the librarian take out memberships in his professional associations as it is for any other specialist in the company, and it is important to his continued growth in his work that he attend conferences in his field of work. Expenses in these connections should be met by the company and should be allowed for in the annual budget.

The amount spent on salaries is always the biggest item in the current budget of a business library, for it is only through provision of an efficient staff that the materials can be put to their fullest use. The library staff scans, digests, selects and passes on the information so essential to the members of the organization, and it is only when this is done that the best type of service is given. There is one point not usually remembered in establishing a library: if there is a fairly large basic collection to be organized, it is much wiser to employ, at the outset, a sufficiently large staff to put this in order than to attempt to spread the work over several years. The sooner the collection is ready for optimum use, the sooner the service will be able to give a one hundred per cent performance. It might therefore be necessary during the first year or two to provide a slightly larger staff than will be needed to operate the library once it has been completely organized.

Choosing A Location

No organization to-day, operating with any hope of making a worthwhile profit, would consider establishing a production or distribution unit without careful consideration of all the economic factors involved in the choice of a suitable location. But the same organization can, and often does, jeopardize the successful operation of its library service by allocating to it the least attractive and most unstrategic spot in the building. The library to fulfill its purpose should be easily accessible and readily found. Where there are branches in other buildings, or on several floors, each branch should be carefully placed in relation to the clientele it is to serve.

Acquiring the Trained Personnel

It should be accepted without argument that the head of such a company-wide information service should have all the personal qualities necessary in any officer of the company, plus a few special qualifications demanded by the highly specialized nature of the service. The librarian of a mid-western bank in the United States has recently been made an officer of the bank. This is not only a tribute to her personal attributes as a leader and a librarian, it is also recognition of the vital and important place which her department has attained in the successful accomplishment of the organization's objectives. The company which starts planning its information service from this point of view is already well on the way towards getting the service it needs but so often fails to obtain because the plan was put into effect at too low a level.

In order to meet the demands of the organization for information at all levels, it is necessary for the information officer to have intimate knowledge of the company's activities and aspirations, and to identify himself with its aims and ambitions. It is therefore necessary that he should have the status which will permit him to sit in on deliberations over the company plans for development. Only then will he have the knowledge which will enable him to anticipate demands for information in new fields of interest, and to continue to save high-priced executive time by being ready, at all times, to supply the correct information at the moment it is needed. The librarian is, in effect, a liaison officer between the sources of information, both human and printed, available inside and outside the organization, and those who need information.

And now, having decided to install this service, where and how are we going to find the chief administrator to head it? In the past, demands for engineers, business administrators and, more recently, personnel executives and industrial physicians have been met by the training agencies already in existence in our midst. Sixty years ago, the professionally trained librarian was practically non-existent, but the cry from libraries to be relieved of the time-consuming processes of training employees on the job resulted in establishment of the library schools. More recently, the call has come for the library administrator, specially developed to head the great general libraries which have been growing up. In days gone by, eminent scholars were elected to head such enterprises; to-day, the scholar who accepts such a call is forced to give up his scholarly pursuits and devote his time to purely administrative matters. Not many scholars now are content thus to sacrifice their careers as scholars. So, we find the development of courses for library administrators, and higher degrees in a new discipline that is developing —a discipline which concerns the organization of knowledge for use and the organization of the services for its use.

Many of the company libraries to-day are headed by superb librar-

ians who do not have any more university training than some of the heads of great engineering and construction companies had only a few years ago. Years of experience have gone into the making of these titans of the special library profession, but there is not time any longer for the practical method; we must take some short cuts; and just now there are a few groups of library educators and practising special librarians working on the problem of the necessary additional training by which general library training must be supplemented if the increasing demands of business and industry for highly qualified personnel to head their information services are to be met.

Here, in Canada, we have two very long established library schools: one at McGill University, the other at Toronto. Both are constantly studying ways and means of improving their courses, raising their standards, and doing everything possible to turn out a product which will fill the current demands for several types of specialization in public, university and special library fields. But Canadian business itself can do something to assist in developing this programme; by elevating and enlarging its conception of what the implications of its demands for information really are, by lifting the librarian out of the skilled clerical class and putting him into the information officer category, by offering a salary worthy of the educational and personal requirements of such a position, it can help to draw into the profession the calibre of individual who will, eventually, develop into the best kind of special librarian.

In the meantime, through the Special Libraries Association Placement Service, contact can be made with all kinds of experienced librarians with specialized knowledge in many departments of human activity. A nation wide system of Employment Chairmen in the local chapters of this organization, which includes chapters in Toronto and Montreal, and a central Placement Service at their headquarters office in New York City, makes it possible to obtain information about special librarians in all parts of the United States and Canada.

Point of Departure

There are many points to be considered in planning a library: its scope, its size, location, the cost, and the purpose it is to serve. The size of the organization itself, the nature of its activities, and the purpose for which the library is being established will determine its size and cost. But there is no rule which commits an enterprise to launching out on a big scale at the outset. A qualified and efficient librarian can work miracles with quite a small collection which includes basic information sources, current periodicals and government documents; even a relatively small company can afford this much.

Every project must have a beginning, and frequently this is the hardest step of all to take when we are initiating a new activity. Perhaps

the best way to promote a company library is to set up a planning committee of executives representing the various divisions of the company's activities, whose object will be to survey the entire organization and to determine for themselves the areas in the organization where a constant flow of information is needed, and to what extent it is needed. This done, the next step will be to ascertain the amount spent annually in each of these areas to obtain needed information, either through purchase of printed materials or as fees to outside specialists for special studies. The results of such a survey might show that a properly organized library to serve all these areas according to their specific needs would cost very little more than the sum disbursed annually through many channels. But, before another move is made, the librarian should be appointed so that, from the very beginning, his skill and special knowledge will be available for the careful planning which must be done if the project is to be the success it can be.

Why Non-Food Items Are Increasing In Canada's Food Markets

Kenneth W. Harrigan

What is the outlook for unrelated items in the grocery markets of Canada? According to a survey recently conducted by Mr. Harrigan, these items are sufficiently attractive to the housewife to buy and to the retailer to merchandise to warrant a continuing expansion of the existing trend.

MANAGEMENT is ever looking for supplementary lines to stock—items which offer a fair degree of turnover, added profit, and customer satisfaction. To achieve this objective, many food store executives have turned to merchandising numerous products heretofore not generally associated with this type of store—a new and developing departure in grocery store merchandising in Canada.

Just how far has this departure progressed? To find a satisfactory answer to this question three separate approaches were used:

(1) Poll of Executive Opinion;
(2) Poll of Consumer Buying Habits;
(3) General observation of trend in period of six months in food markets of London, Ontario.

It was felt that these three approaches would give a fair degree of insight into the promise of these items in food stores and the overall position taken by the leaders of food distribution in Canada.

Non-food items may be defined as those not regularly stocked in the past in food markets. A more exact term would possibly be "unrelated items." These include beauty and health aids, household goods, magazines, wool, kitchenware and a host of other miscellaneous articles.

Poll of Executive Opinion*

Super food markets in Canada and elsewhere have been established for the primary purpose of distributing food products, and for this reason any great change of policy from this original purpose is unlikely. However, it is the opinion of the executives whom the writer has contacted that the number of these unrelated items will increase as long as

*The author wishes to acknowledge the cooperation of the executives of Dominion Stores Ltd., Loblaw Groceteria Co., and the Great Atlantic & Pacific Tea Co., without whose help this survey would not have been possible.

demand warrants and display space is available in these stores. That is, the number of these items will probably vary in proportion to the size of the store.

The trend of these items in Canada is an offshoot of the trend of corresponding items in the United States. The trend in Canada, however, since we are generally conceded to be a more conservative people, will tend to be slower. The reason that food stores have taken on an ever increasing number of unrelated items in the U.S. is a desire to compete more favourably with the recently established and successful general super markets.** These items have proved to be quite profitable and subject to minimum price-cutting.

Both merchandise executives of two leading Canadian-owned food chains agree that the desire for increased sales, increased profit margin, and additional consumer service are the chief motives for taking on these extra items.

One executive stated that it was simply a matter of following the general trend established in the U.S.: "Everyone is doing it." However, he stated that stocking of these items by competitors was not a primary consideration. It was enough that every proven item stocked meant extra sales and added profits. All executives agreed that most of these items were added to give their customers greater satisfaction because of greater selection of products. Although there is a greater selection in one sense, the number of products handled in these various classifications is quite limited as compared with variety and drug store stocks.

One grocery chain in Canada has handled a great number of non-food items for the past few years. As the vice-president stated: "At first these were taken on on a trial basis. We were influenced by the success these products had had in food stores in the U.S. and were consequently interested in increasing volume, profits, and customer selection by merchandising these products ourselves. When the items were first displayed they were bought chiefly by impulse buyers. Gradually over the years customers became accustomed to seeing and buying these products in our stores. Now, all our stores are handling a standard variety of these non-food items. Newer stores where display space is more available are handling more and more of such items. There has been a change from impulse buying to convenience buying. Even last year a new line was added—kitchenware—including such items as spoons, pie and cake plates, egg beaters, bowls, etc. These products are finding a fair amount of success and again appeal to the customers on impulse. We are thus trying to offer such a variety of goods that the customer need not be inconvenienced by making a special trip to a variety or drug store and

**General super markets are defined as those stores selling a wide variety of goods in separate departments such as dry goods, confectionery, drug and hardware depts.

may become aware that she may complete most of her shopping needs within the four walls of our outlets."

An executive of another food chain explained: "We believe that the better selection of items we can offer our customers, the more satisfied they are Our merchandising people are searching at all times for any items that will increase overall sales at a reasonable margin. Because we have no knowledge of the sales possibilities of unrelated items, it is our practice to place a representative stock of each new item in a small group of stores to find out the sales movement. Upon the results of these tests, we decide our future action regarding each special item."

One chain merchandises 285 unrelated items out of approximately 1500 items handled. However, not all of the stores in this chain handle all these unrelated items. The fact that the number of stores with sufficient space to display unrelated items has increased has naturally influenced a trend toward a greater number of unrelated items on inventory.

One large "super market" chain has kept the number of these items at a minimum. It is the viewpoint of this chain that: "We are in business primarily to sell food; it is our desire and intention to give the customer a greater selection of food items—to build up the feeling in the customer's mind that we can fill everything in her food requirements and that she may be assured that a greater volume of food items at lower cost will give her increased savings in her weekly food bill. We want our stores to be known by our customers as 'food centres'; we are not in the variety store business."

All executives of all the firms contacted agree that the markups taken on these unrelated non-food items is somewhat higher than the markups taken on most of the food items. In drug and beauty aids, the prices are mostly fixed in agreement with drug associations. The markup on gadgets and toys is considerably higher than on other items. However, the overall gross margin of these latter items need not be higher than on other items handled. The executives agree that unrelated items must be priced competitively with drug, hardware and variety stores. Many of these items are listed to attract customers; in such cases the margin is a secondary consideration. One chain claims the original markup on gadgets and novelty items is approximately double the markup on the regular grocery item. The margin on final sales is, however, only slightly higher than on the regular merchandise. "For instance, a gadget may be displayed at a cost of 30 cents to sell at 69 cents. Because of slow movement, we may clear it at 19 cents."For the most part the markup on these items is no higher than the markup on some classes of food items, including fancy imported foods.

One other question was asked: "Did you get any complaints from drug stores or hardware stores when these products were listed?" The

answers to this question were varied, but it was the overall opinion that antagonism was evident. The association representing the druggists of Ontario and Quebec has strenuously objected to the sale of beauty aids and home remedies by food stores, and has gone so far as to threaten to boycott any drug wholesaler selling to these food stores. The chains, however, have been able to obtain these items by variously camouflaging their sources of supplies. Only the top buying executives of one food chain have knowledge of where these products are purchased. Up to now there has been no organized resistance by retail hardware merchants, but some hardware wholesalers have refused to sell to food distributors. All executives agre that there is a trend toward increasing numbers of non-food items in food outlets.

Poll of Consumer Buying Habits

A random sample of households in London formed the basis for this part of the survey. London was chosen for a variety of reasons: (1) the ease with which housewives could be contacted, (2) the conservative buying habits of the citizens, (3) the increased building and expansion of chain stores in this city in the past year.

In the United States, Batten, Barton, Durstine and Osborn, Inc. Advertising Agency has undertaken a very comprehensive study of consumer buying habits with respect to non-food items with their Nation Panel of Consumer Opinion. The results of this valuable survey were compared with the results achieved on the survey undertaken by the writer.

Seventy-two items were chosen as compared with 60 by B.B.D.O. and divided similarly into 5 classifications. Because of the number of items in each classification five questionnaires were prepared, only one of which was asked of each housewife interviewed.

Questionnaire No. 1 — *Health Items*
" No. 2 — *Paper Products*
" No. 3 — *Home Maintenance Items*
" No. 4 — *Beauty Aids*
" No. 5 — *Variety Items*

A fairly accurate cross-section of London housewives was maintained according to type of home, income group, etc. Such factors as proximity to drug stores, hardware stores and food stores and stores patronized were taken into consideration in the final analysis. Finally the housewives were asked to comment on whether they would like to purchase all these items at their food markets.

Each questionnaire contained a list of 12 to 14 items as shown in *Exhibit I.* The items on these lists included those which offer promise in grocery stores as well as those that appear to hold little promise.

EXHIBIT 1

Questionnaire No. 1

To Determine the Trend of Unrelated Non-Food Items in Food Stores in London, Ontario

February, 1951

Health Aids

Questions	(1)			(2)			(3)	(4)			
	Does your grocer stock this item?			If you answered "yes" to question (1), when shopping do you ordinarily buy this item from your grocer?			If your grocer does stock this item, but you prefer to buy it elsewhere, please tell why.	About how often do you purchase this item?			
Item	Yes	No	Don't Know	Always	Sometimes	Never	Briefly Why	Weekly or more often	About once a month	Several times a year	Yearly or less often
1. Bandages											
2. Chest Rub											
3. Cold Tablets											
4. Cough Remedies											
5. Cotton (absorbent)											
6. Eye Wash											
7. Headache Tablets											
8. Headache Seltzers											
9. Mouth Wash											
10. Petroleum Jelly											
11. Sanitary Napkins											
12. Tooth Brushes											
13. Tooth Pastes											
14. Tampons											

(5) If there are any health aids not on this list that you would like to be able to purchase at your grocery store, please list such items below.

1..... 3..... 5.....

2..... 4..... 6.....

(6) Would you like to buy all health items at your grocery store?

(7) Would you buy these items if you saw them displayed in your grocery store?

The results of this consumer poll indicate that there is a fairly clear-cut distinction between those items which customers have associated with particular stores and those which they do buy and are willing to buy in grocery stores.

Health Items

Such items as bandages, headache seltzers and tablets, petroleum jelly and tooth paste offer extreme promise not only in consumer demand but in frequency of purchase. Items such as chest rub, cold tablets, eye wash, mouth wash and tampons show the least preference as to purchase.

Paper Products

All paper products except stationery and cook books hold promise in grocery stores. It is interesting to note that a very high percentage of women say their grocer stocks drinking straws, serviettes and paper plates. Many of those interviewed stated that they would like to buy greeting cards in the process of their food shopping.

Home Maintenance Items

A majority of housewives recognized their grocer as stocking brooms, brushes, cleaning fluid, home insecticides, household oil, household deodorants, light bulbs and metal and silver polish. All these items seem promising and are rapidly becoming associated with grocery stores. Garden insecticides, can openers and electric fuses and cords are not as yet recognized as grocery store items.

Beauty Aids

Beauty aids on the whole do not appear to be stocked at a majority of the interviewees' dealers. A strong preference by housewives to purchase these goods in drug stores is very evident. For such items as face powder, lipstick and nail polish, brand and type is very important, and adequate display and selection are not possible in a grocery store. However, such items as shaving cream and hair tonic show a great deal of promise.

Variety Items

Shoe polish and clothes pins and lines all rank high as unrelated items increasingly stocked by grocery stores and frequently purchased by grocery store customers. Such items as flashlights, glassware, cookingware and dinnerware are new items being introduced in grocery stores and consequently no response can be measured as yet. However, there is a definite desire on the part of housewives to buy these items elsewhere.

The following general observations may be drawn from the answers given in this survey:

(1) Non-association of specific unrelated items with the grocery market appears to be the reason many housewives do not ordinarily buy

these items in food stores. This situation will improve, however, as time goes on.

(2) Many housewives feel that grocers handle enough items without these unrelated non-food items—that the druggists and hardware merchants only should merchandise these items.

(3) A good proportion of those making the above statement do, however, say that they would buy these items in their food market if they saw them and needed them.

(4) The biggest argument for purchasing the non-food items at drugstores and hardware stores is the nearness or convenience of these stores.

(5) Many of the unrelated items are bought frequently and consequently offer quick turnover.

(6) There is sufficient demand for these items to be profitable to the grocer.

(7) The results of this survey correlate very closely with the results of the similar B.B.D.O. survey in the United States.

Observation of Trend

To carry this survey one step further the appearance, number and turnover of non-food items was observed in several food markets in London in November, 1950, and again in April, 1951. The results are set down in *Exhibit II* below.

EXHIBIT II

	November 1950 Total No. Items	April 1951 Total No. Items	No. New Items	No. Items Dropped From Inv.
Food Market A	140	155	18	3
Food Market B	108	173	65	0
Food Market C	42	68	18	2

Out of the 72 items on the list in the survey to housewives one chain store carried 45, another 42 and another 21.

During the period of six months one chain had installed a kitchenware department merchandising kitchen utensils ranging in price from 15 cents to $3.95, a wool counter carrying 20 shades of wool, and a magazine rack carrying over 48 varieties of current reading material.

One operator of a medium sized market complimented himself on selling over 200 dozen cut daffodils in two days of business.

It has been observed that all markets are selling garden seeds, and are constantly adding such items as extension cords, oven mitts, tea towels, drinking glasses. Here is a real change in food-store merchandising.

Separate sections and islands have been set aside in these stores for hardware items, drug items and variety items. No set conclusion can be drawn on location of these sections within the store with the exception that the small-item departments are placed where pilferage can be kept to a minimum. Health aids and drug items in one food market are located at the front of the store as close to the check-out stands as possible. Magazine racks are generally located within the store where traffic is slow and where the customer can take time to select her magazine.

The overall trend among grocery retailers is towards a constant addition to their stocks of unrelated items, whenever this is feasible.

Conclusion

The evidence is that, in due time, the customer will become sufficiently aware of the greater number of household needs obtainable at food stores that she will buy these lines chiefly at these outlets. As long as these items are attractive to the customer to buy, and to the retailer to merchandise, a growing number of stores will handle more and more of these unrelated non-food items. Retailers are ever searching to increase overall profits by adding items which will offer reasonable markups to supplement low markups taken on many food products already in stock. When we consider, too, that the big food chains are tending to build larger and larger markets, with ample space for display of unrelated items, there is every reason to believe that the trend to a greater number of unrelated items will continue.

Current Books and Articles

SOCIAL ECONOMY AND THE PRICE SYSTEM: AN ESSAY IN WELFARE ECONOMICS. By Raymond T. Bye. The Macmillan Company, New York: 1950. 356 pages.

This brief treatise is a critical analysis of the nature and functions of the price system in the social economy. The author contends that certain criteria should be observed if economic society is to survive and progress. Some of these basic criteria are: the principle of want selection (the most important wants should be satisfied first), the principle of a guaranteed minimum (the basic requirements of all should be met before luxuries are allowed to any), the principle of incentive (rewards above the minimum should vary with the socially useful productivity of the individual), the principle of developing talent (society should provide the means for discovering and training individuals with special aptitudes), and the principle of common surplus (in a prosperous society the surplus production should be distributed for the common good).

On the basis of generally accepted economic theory, Professor Bye examines the operation of the price system and shows wherein it fails to produce results which conform to the criteria of social welfare mentioned. He suggests ways and means whereby a closer approximation to the ideal could be attained within the framework of the free enterprise economy. For example, Professor Bye holds that a program for the abolition of mass unemployment must incorporate four elements: the development of a monetary system that does not permit the expansion and contraction of credit by banks, a great reduction in the present extreme inequality of incomes, the preservation of international peace, and the formulation of a system of economic planning under the egis of the state.

While admitting the possibility of improvement without the adoption of socialism, the author shows a strong bias in favour of some form of collectivism. But this little book is no sentimental plea for socialism. The author clearly points out the pitfalls of Marxism and discusses the economic and political drawbacks of a completely state-controlled economy. He contends, nevertheless, that if consumers were permitted freedom of choice in the consumers' goods market, management's task would be relatively simple. Managers of state-operated enterprises would follow two rules: (1) substituting cheaper for dearer production factors and (2) employing additional units of each factor till the value of its marginal product equalled its price.

Professor Bye is by no means dogmatic in his views respecting the ultimate results of the movement toward an ever greater measure of state interference in economic matters. He points out that the economic

and political issues confronting us are crucial. Therefore, "it behooves us to proceed by evolution, rather than by revolution, entrusting increasing powers of economic control to our government only as fast as it proves competent to wield them wisely, efficiently and democratically." In this reviewer's opinion, everyone interested in the development of economic welfare would derive much benefit from reading *Social Economy and the Price System.*

—M. K. INMAN.

MUNICIPAL FINANCE. A report prepared by the Civic Advisory Council of Toronto. University of Toronto Press: 1950. 185 pages.

This book is the report of the Civic Advisory Council on the subject of municipal-provincial fiscal relations with particular reference to the problems of the City of Toronto. The report was requested by the City Council of Toronto, and the terms of reference were, "to inquire into, and report upon, the nature and extent of the existing fiscal interrelationships of the City of Toronto with the Province of Ontario and with other municipalities within the general field of municipal-provincial fiscal relations, and to make such recommendations, for the information and guidance of the Council of the City of Toronto, as may appear fitting."

The report consists of five main sections, as follows:

I —An outline of municipal government in Ontario with special reference to the City of Toronto.

II —An examination and discussion of the revenues and expenditures of the City of Toronto with a sub-section devoted to the city's debt position and policy.

III—A study of inter-municipal and municipal-provincial relations.

IV—Further consideration of education, taxation of property, housing policy and public works.

V —The question of municipal fiscal policy.

Although this report was prepared for the City of Toronto, and consequently bears directly on the problems of that city, it contains much that should interest all municipal officers and elected representatives. The eight recommendations of the Committee which are summarized at the end of the book, while by no means revolutionary, deserve consideration by all citizens. This reviewer was particularly impressed by recommendation number seven, which suggests, "that each municipality have a carefully thought out long-term budget for its own capital needs, to pass on as a recommendation from an outgoing to an incoming council."

—J. C. TAYLOR.

SUCCESSFUL SALES PROMOTION. By Harry Simmons, Prentice-Hall, Inc., New York: 1950. 481 pages.

This book is devoted to some of the best methods and techniques that have been developed by leading men in the Sales Promotion field. In clarifying the distinction between advertising and sales promotion, the author accepts the premise that after "omitting a few hundred of our largest national advertisers, the majority of our so-called advertisers really aren't advertisers at all. They are 'Sales Promotion-ers'. The lion's share of their 'advertising' budgets is used for *Sales Promotion.*"

The subject is divided into 32 different sections, covering everything from House Organs to Labels to Sales Training to Conventions and Trade Shows. Considerable time and effort has been spent in producing numerous case histories. The book therefore is rife with suggestions and ideas detailing in a most thorough fashion all the steps required to put the different plans into action.

The approach is analytical and tends towards text book style. It may be classified as a Primer in Sales Promotion and could be used for reference purposes. The style is not particularly invigorating, and the text therefore lacks that undercurrent of enthusiasm which some might desire in any subject related to salesmanship.

—J. A. LYONE HEPPNER.

Ads Pegged to Hot TV News Help Establish The Raytheon Brand. (SALES MANAGEMENT, January 1, 1951.)

The story of the Belmont Radio Corporation's entry into the TV field with their Raytheon set is interesting. For a good many years the Belmont Company has been a leader in the manufacture of private brand radio sets. Its distributors are in the main in districts which are not covered by television broadcasting. If they were to enter the TV field, Belmont knew that they would have to: (1) build their own sales organization, (2) develop a service organization, (3) make known their TV brand name. The big companies were already pouring huge sums of advertising money into the larger cities, so Belmont decided to sneak in the back door and concentrate on the secondary markets, which to some extent were being neglected. Since the campaign started, Raytheon has been among the top sellers in such cities as Atlanta, Dayton, Columbus, and Cincinnati. The reasons for concentrating on the smaller cities were:

1. Production facilities were limited.
2. It was less costly to establish the trade name.
3. Control of the flow of merchandise was easier during an expansion program.

At the moment it appears that the secondary markets are pretty well under control. The next move will be into the larger cities.

To get the public to accept the new brand name, "Raytheon", Belmont used a series of service features—"Giving the Truth about Television." Problems of vital importance to the TV conscious public were aired in full page advertisements. Public interest was astounding; the Belmont Company had departed from the line which other TV advertising had followed, and the move had paid off. Besides doing a public service, the Belmont Company placed the name "Raytheon" before the TV market in a very favourable light.

—J. McISAAC.

We Build a Food Brokerage Distribution System in Five Weeks. (SALES MANAGEMENT, March 15 ,1951.)

In late 1950, Mead Johnson and Company were faced with the problem of replacing one complete distribution system by another. What they needed was a more rational system, not merely a new one designed to increase market coverage. Food stores accounted for 85% of their sales, yet they were still distributing only through drug wholesalers. In order to protect their market, they foresaw that a switch to new channels was necessary immediately. Since salesmen were too expensive, the company decided to use jobbers. They took advantage of a jobber's convention in New York to make their new contacts. The speed and efficiency with which they operated in the few weeks following the decision to switch distributors is fascinating. The success of their move is evidenced by the marked difference it has made to their distribution set-up.

—J. McISAAC.